

PC24EK₁ PC30EK₁ PC36EK₁ PC42EK₁

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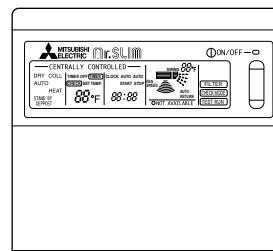
TECHNICAL CHANGE

Differences with OC001 which is a basic service manual.

Change points				EK	EK1
Remote controller	Appearances			$4\text{-}3/4 \times 2\text{-}3/4 \times 5/8$	$5\text{-}1/8 \times 4\text{-}3/4 \times 3/4$
	Dip switch	SW17	No.9	Switch for temperature unit	Canceled
			No.0	Switch for louvers	Canceled
		SW18		—	Addition of "Mode selector"
Indoor controller	Dip switch	SW1	No.10	OFF	ON
		SW5	No.3	—	Addition of "Not yet used"
			No.4	—	Addition of "LOSSNAY interlocked or not"
		SW6		—	Addition of "Mode selector"
	Connector for LOSSNAY interlocked			—	Addition of "CN2L"
Optional parts	Program timer			PAC—SK65PT	PAC—SK32PTA



PC24EK1
Indoor Unit



Microprocessor
Remote controller

Models	Cooling capacity	SEER
PC24EK1	24,000 Btu/h	10.3
PC30EK1	31,000 Btu/h	10.4
PC36EK1	36,500 Btu/h	10.2
PC42EK1	42,500 Btu/h	10.0

1. ADVANCED MICROPROCESSOR CONTROL

(1) Easy to use Microprocessor (remote controller)

1) Ultra-Thin Remote Controller

The streamlined, square controller is designed to blend with any kind of interior and the adoption of a sophisticated microprocessor allows you to carry out a wide range of operations easily.

2) Attractive Liquid Crystal Display (LCD)

Units operation mode, set temperature, room temperature, timer setting, fan speed, louver operation, and air flow direction are displayed on the remote controller with the easily understood visual Liquid Crystal Display (LCD).

3) Convenient 24-Hour ON-OFF Timer

The timer allows Mr.SLIM to be switched on and off automatically at the time you set. Once the timer is set, the remaining time is shown on the LCD.

4) Self-Diagnostic Feature Indicates Faults Instantly

In the rare case when a problem occurs, the unit stops operating and the set temperature indicator changes to the self-diagnostic indicator, indicating the location of the fault.

If the check switch is pressed twice, the unit stops operating and the check mode is initiated. The cause of the most recent problem stored in the memory is displayed on the LCD. This is extremely useful for maintenance purposes.

5) Useful Memory Feature for Storing Instructions

The previous set value is memorized so that constant temperature control can be obtained. This is convenient when, for example, a power failure occurs.

(2) Non-polar Two-Wire Remote Controller Cables

The non-polar, two-wire type remote controller cable is slim, installation is simple and trouble-free. Remote controller wire can be extended up to 550 yards.

2. INNOVATIVE SYSTEM CONTROL BY MICROPROCESSORS

The most significant feature of the series PC-EK is the advanced microprocessor system control. Behind the development of this system is the recent world-wide trend in the air conditioning of larger buildings, away from centralized duct systems in favor of a large number of individual split type units. There are a number of reasons for this: first, costly, troublesome duct installation is eliminated; second, the overall air conditioning balance is excellent; and third, operation cost is low since flexible control of each unit is possible. This system control was developed exclusively by Mitsubishi in the light of this demand. Microprocessor control makes possible individual control, group control, control using two remote controllers, remote on/off control and individual control without troublesome modifications to the equipment.

(1) Individual Control by Gathering Remote Controllers

A Series PC-EK unit is installed in each room, and the remote controller are gathered together in separate location, where each unit is controlled individually.

Each remote controller is connected to its indoor unit by non-polar 2-wire cable to eliminate the possibility of mis-wiring. Separation can be as much as 550 yards, making this type of control extremely easy to implement. Thermistors in the indoor unit maintain each room at its own individually set temperature.

(2) Group Control by a Single Remote Controller

In an application requiring a number of air conditioner units in a large area on a single floor, up to 50 units can be centrally controlled using a single remote controller. The remote controller controls Power ON-OFF, set temperature, fan speed, swing louver ON-OFF timer, and auto vane position of all units of the group. Obviously, if all the units started simultaneously, the surge current would be unacceptably high. Therefore the microprocessor board of each indoor unit has a 8-tog-
gle DIP switch that can be programmed to give sequential starting with up to 50 seconds delay. When the switch of the remote controller is pressed, master unit comes on immediately, followed by the other units in the programmed order. Thereafter the thermistor in each indoor unit controls compressor operation to keep the room at the set temperature.

The remote controller is connected to the indoor units by non-polar 2-wire cable. Total cable length can be as much as 550 yards. This system can be applied to the air conditioning of large offices or conference rooms, supermarkets, etc.

(3) Control Using Two Remote Controllers

Two remote controllers can be used to control either one unit or several units in group control. This makes it possible to control units with ease either from a distance or at close range. Units operate according to the latest commands from either remote controller.

(4) Both Remote ON/OFF Control and Individual Control

All units can be turned on and off simultaneously using the remote ON/OFF switch, and also individual units can be controlled from the remote controllers.

This system is well suited to buildings having a large number of rooms. In offices, for example, all units can be started together to cool or heat the premises before workers arrive, operated as necessary by individual remote controllers during the day, and stopped together at the end of business.

3. REDI-CHARGED REFRIGERANT SYSTEM

When refrigerant tubing is 100ft or less, it is unnecessary to charge additional refrigerant. This can contribute to enhance installation quality and reduce installation time.

4. MAXIMUM COMFORT AIR CONDITIONING

(1) Indoor Unit Chargeable Air Outlet

PC-EK series have changeable air outlet.

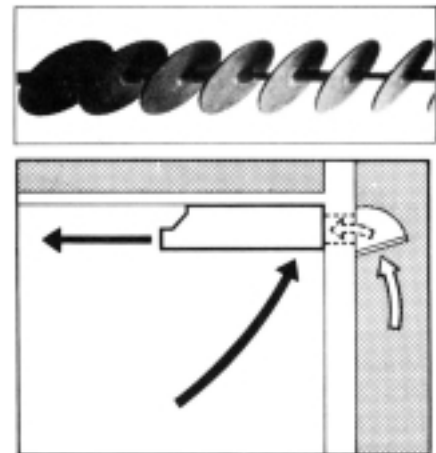
Downward air flow can be obtained at an angle up to 30°. Upward air flow at angle of 10° is able to stretch cool air in a room. This function enables comfortable air distribution.

(2) Swing Flow Louvers

The swing Flow Louvers automatically change the air flow direction for desirable air distribution.

(3) Fresh-Air Intake

The PC-EK series also has fresh air intake, providing more comfortable, healthful air conditioning through better ventilation. The rear panel has a knock-out for the intake of fresh air.



5. STABLE COOLING EVEN AT OUTDOOR TEMPERATURES AS LOW AS 23°F MAKES YEAR-ROUND AIR-CONDITIONING POSSIBLE

The microprocessor automatically adjusts fan speed in accordance with outdoor temperature to maintain the coolant at an even condensing temperature. The result is smooth, efficient cooling even when temperatures outdoors drop as low as 23°F. This makes the unit ideal for a wide range of specialized cooling needs, such as rooms with many office machines or computers and areas subject to strong sunlight.

6. DRAIN PUMP FOR EASY PIPE CONNECTION (Option)

This mechanism, with its capacity to raise drain water 20" above the ceiling line, is convenient for removing water and avoiding piping contact with beams, etc.

Note : This can not be mounted in the unit.

7. SLIM, COMPACT AND SPACE SAVING

(1) Space Saving Design

Because the PC-EK series indoor units are designed to be suspended from the ceiling, valuable floor space and wall surfaces are not used. The unit is only 7-11/16" high and 50-7/16" wide (PC24EK).

The outdoor units are also slim line, with a depth dimension of only 11-5/8" (PU24EK).

(2) Flush-To-The-Wall Installation

Since the units in the PC-EK series are installed flush against the back wall, connection pipes are hidden. This gives the room a touch of sleek sophistication.

8. EASY INSTALLATION

Installation is simple, thanks to the easy-connection refrigerant lines. As all outdoor units are charged for 100' of line set and tested at the factory, there's no need for special on-site work.

The indoor unit is easy to mount and requires only a minimum of wiring, saving your time, labor, and money.

9. HIGH RELIABILITY AND EASY SERVICING

In addition to the self-diagnostic function, units are also equipped with a 3-minute time delay mechanism, an auto restart function, an emergency operation function, a test run switch, etc., to assure high reliability and easy servicing.

10. ECONOMICAL AND EFFICIENT OPERATION

- Mitsubishi exclusive LCD indicators show the temperature selected and the current room temperature. This system ensures full protection against excessive cooling.
- The Mitsubishi Electric split-type air-to-air PC models feature highly precise compressors with large-capacity heat exchangers for efficient operation.

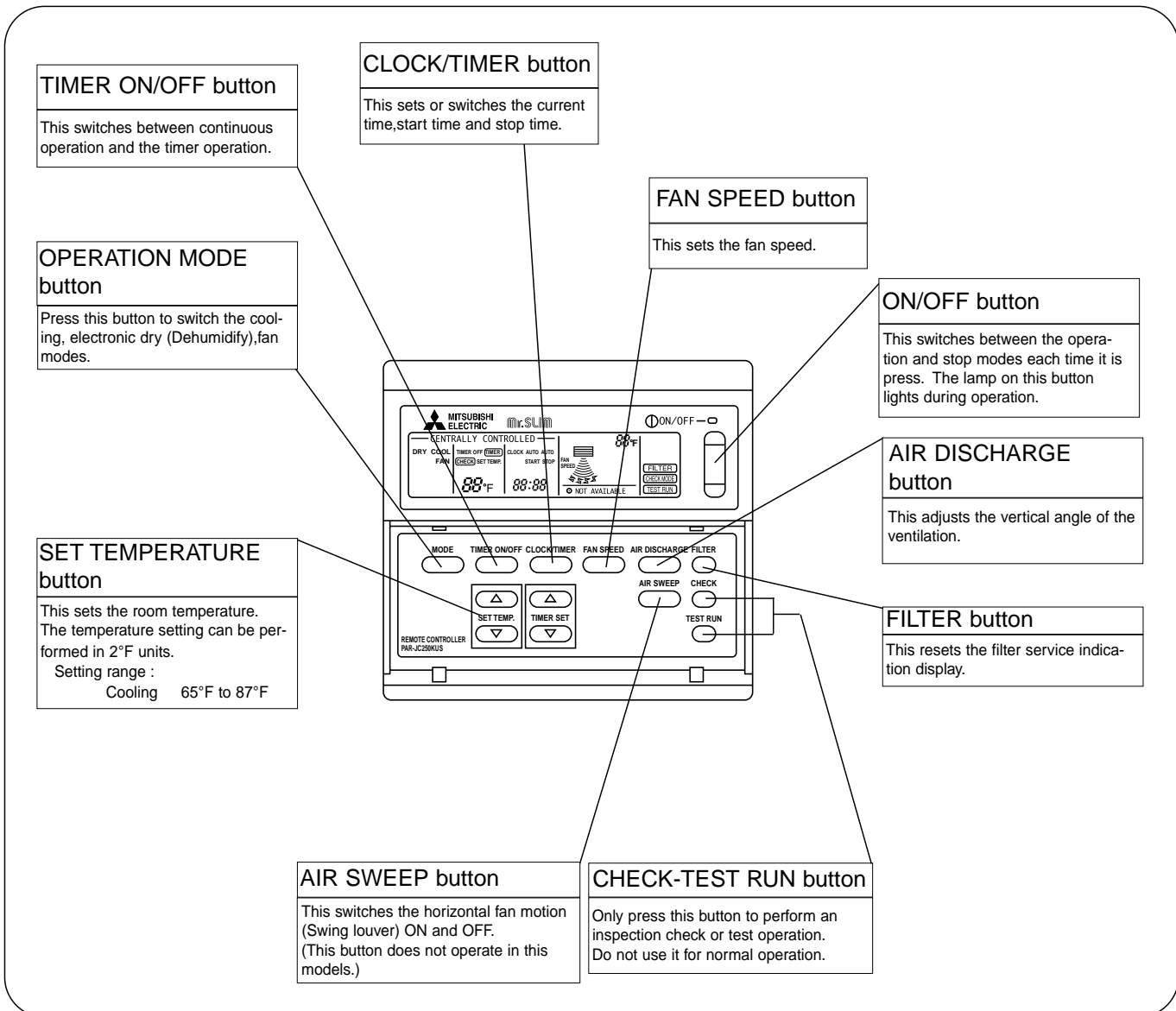
11. NITROGEN GAS IS CHARGED TO INDOOR UNIT

Indoor units of this series are charged with nitrogen gas (N₂) instead of (R22) before shipment from the factory.

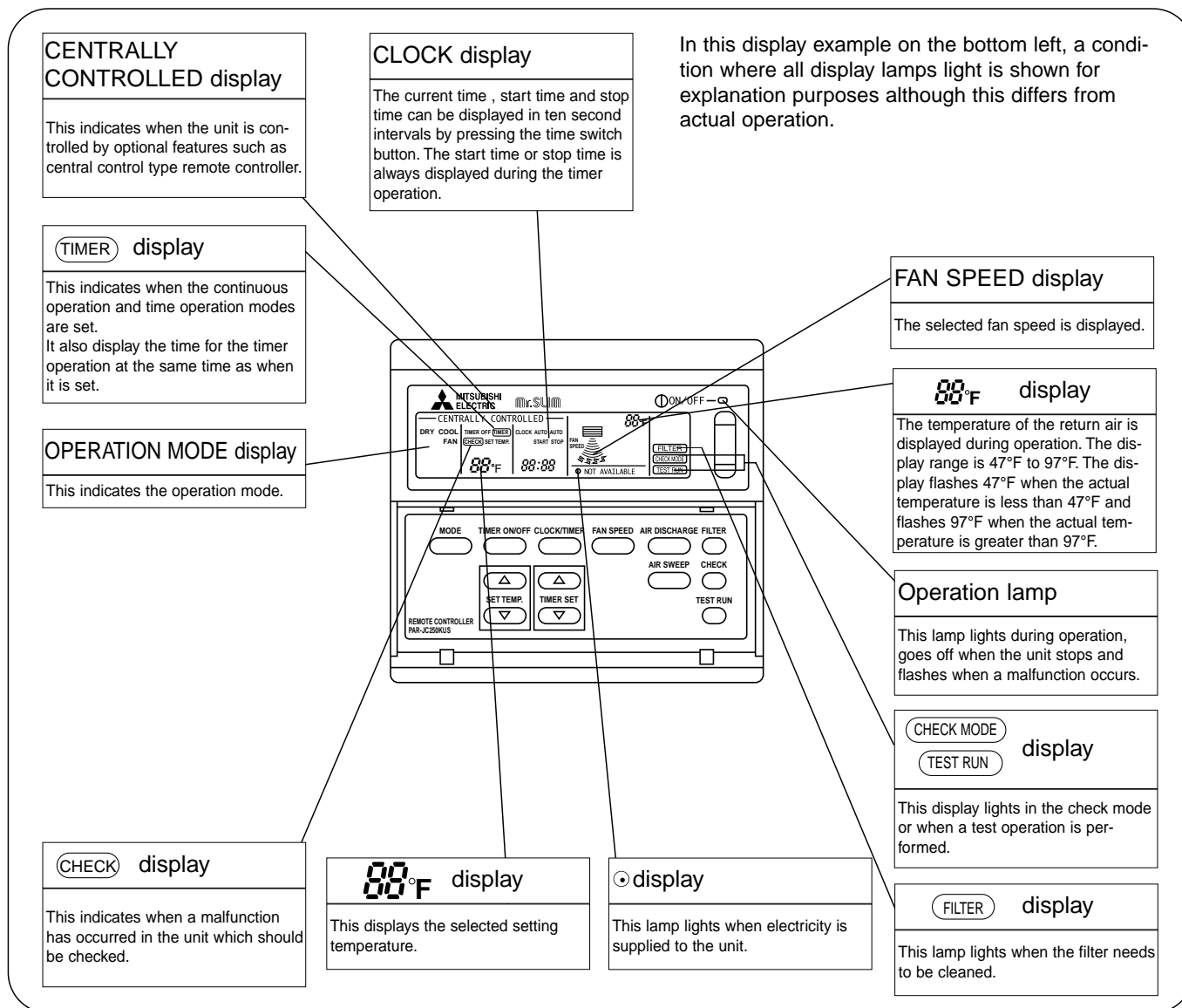
Remote controller

Once the controls are set, the same operation mode can be repeated by simply pressing the ON / OFF button.

Remote controller operation buttons



Remote controller display



Caution

- Only the ⊙ display lights when the unit is stopped and power supplied to the unit.
- When power is turned ON for the first time the (CENTRAL CTRL) display appears to go off momentarily but this is not a malfunction.
- When the central control remote control unit, which is sold separately, is used the ON-OFF button, OPERATION MODE button and SET TEMP. button do not operate.
- "NOT AVAILABLE" is displayed when the AIR DISCHARGE button are pressed.
(AIR DISCHARGE function is not provided for PC series.)

MODELS : PC24/30/36/42EK₁

Model			PC24EK ₁	PC30EK ₁	PC36EK ₁	PC42EK ₁
Item						
Capacity	※ 1	Btu/h	24,000	31,000	36,500	42,500
Power consumption	※ 1	kW	2.43	3.10	3.80	4.40
EER	※ 1		9.9	10.0	9.6	9.7
SEER			10.3	10.4	10.2	10.0
INDOOR UNIT MODEL			PC24EK ₁	PC30EK ₁	PC36EK ₁	PC42EK ₁
External finish			Munsell 2.5Y 8/0.3 & N2			
Power supply			V, Phase, Hz 115, 1, 60			
Max. fuse size (time delay)			A 15	15	15	15
Min ampacity			A 3.0	3.0	3.0	3.0
Fan motor			F.L.A. 1.8	1.8	2.1	2.4
Airflow Hi-Lo	Dry	CFM	1,050-850	1,050-850	1,270-990	1,270-990
	Wet	CFM	900-730	900-730	1,100-860	1,100-860
Moisture removal			Pints/h 7.2	9.6	11.1	12.6
Sound level Hi-Lo			dB 50-43	50-43	52-44	52-44
Unit drain pipe OD.			in. 1	1	1	1
Dimensions	W	in.	50-7/16		62-1/4	
	D	in.	26-13/16		26-13/16	
	H	in.	10-1/8		10-1/8	
Weight			lb 93	115		
OUTDOOR UNIT MODEL			PU24EK ₁	PU30EK ₁	PU36EK ₁	PU42EK2
External finish			Munsell 5Y7/1			
Power supply			V, Phase, Hz 208/230, 1, 60			
Max. fuse size (time delay)			A 20	30	30	40
Min. ampacity			A 16	20	22	27
Fan motor			F.L.A 0.65+0.65	0.65+0.65	0.75+0.75	0.8+0.8
Compressor	Model		NH33NBD	NH41NAD	NH47NAD	NH569NXA
		R.L.A	11.5	14.0	17.5	20
		L.R.A	54	73	87	105
Crankcase heater			A(W) 016/0.17 (33/39)	0.16/0.17 (33/39)	0.16/0.17 (33/39)	0.16/0.17 (33/39)
Refrigerant control			Capillary tube			
Sound level			dB 55	55	55	56
Dimensions	W	in.	33-1/4		38-3/16	
	D	in.	11-5/8		13-9/16	
	H	in.	49-9/16		49-9/16	
Weight			lb. 207	208	220	260
REMOTE CONTROLLER			With indoor unit			
Control voltage (by built-in transformer)			Indoor unit - remote controller : DC12V, Indoor unit - outdoor unit : DC12V			
REFRIGERANT PIPING			Not supplied (optional parts)			
Pipe size	Liquid	in.	3/8	1/2		
	Gas	in.	5/8	3/4		
Connection method	Indoors		Flared			
	Outdoors		Flared			
Between the indoor & outdoor units	Height	ft	164			
	Piping length	fr	164			

NOTES : ※ 1. Rating conditions —indoor : 80°FDB, 67°FWB outdoor : 95°FDB, 75°FWB.

Operating range

		Indoor intake air temperature	Outdoor intake air temperature
Cooling	Maximum	95°FDB, 71°FWB	115°FDB
	Minimum	67°FDB, 57°FWB	0°FDB *

* In case of the wind baffle is installed.

(In case of the wind baffle is not installed, the minimum temperature will be 23°FDB.)

MODELS : PC24/30/36/42EK₁**1. PERFORMANCE DATA****1) COOLING CAPACITY**

Models	Indoor air		Outdoor intake air DB temperature(°F)														
	Airflow (CFM) B.F	IWB (°F)	75			85			95			105			115		
			TC	SHC	TPC	TC	SHC	TPC	TC	SHC	TPC	TC	SHC	TPC	TC	SHC	TPC
PC24EK ₁	$\frac{900}{0.14}$	71	27.8	15.6	2.10	20.7	15.4	2.30	25.8	15.1	2.49	24.8	14.9	2.70	23.6	14.6	2.90
		67	26.2	18.3	2.05	25.2	17.9	2.24	24.0	17.5	2.43	23.2	17.2	2.62	22.2	16.8	2.82
		63	24.5	20.4	2.00	23.6	19.9	2.19	22.8	19.5	2.37	21.8	19.0	2.56	20.8	18.5	2.75
PC30EK ₁	$\frac{900}{0.15}$	71	35.9	17.7	2.67	34.5	17.3	2.90	33.1	16.9	3.18	31.7	16.6	3.45	30.2	16.1	3.73
		67	33.3	21.1	2.60	32.3	20.6	2.82	31.0	20.1	3.10	29.6	19.5	3.35	28.2	19.0	3.62
		63	31.2	23.8	2.55	30.2	23.2	2.78	29.0	22.6	3.02	27.6	21.8	3.28	26.2	21.1	3.55
PC36EK ₁	$\frac{1,100}{0.12}$	71	42.3	21.6	3.23	40.9	21.2	3.53	39.3	20.7	3.88	37.5	20.3	4.25	35.7	19.8	4.62
		67	39.3	25.5	3.18	37.9	24.9	3.46	36.5	24.3	3.80	34.9	23.7	4.13	33.3	23.1	4.49
		63	36.7	28.6	3.12	35.5	28.0	3.38	33.9	27.1	3.70	32.5	26.4	4.03	31.0	25.5	4.38
PC42EK ₁	$\frac{1,100}{0.12}$	71	50.2	23.8	4.00	48.2	23.2	4.25	45.8	22.6	4.55	43.5	21.9	4.85	41.1	21.2	5.25
		67	46.4	28.5	3.90	44.6	27.7	4.15	42.5	26.8	4.40	40.3	25.9	4.70	38.1	25.0	5.00
		63	43.3	32.2	3.80	41.5	31.2	4.00	39.5	30.1	4.25	37.3	28.9	4.50	35.1	27.6	4.75

Notes 1. B.F. : Bypass Factor, IWB : Intake air wet-bulb temperature

TC : Total Capacity (x10³ Btu/h), SHC : Sensible Heat Capacity (x10³ Btu/h)

TPC : Total Power Consumption (kW)

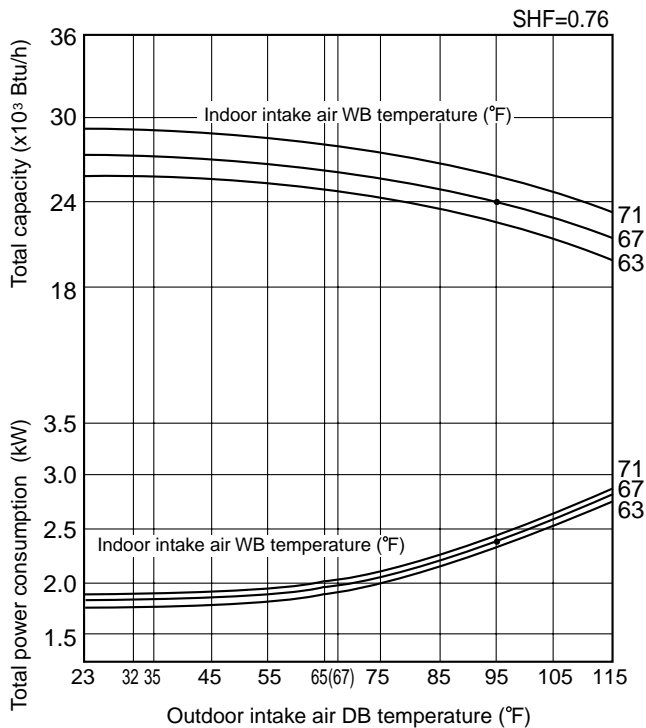
2. SHC is based on 80°FDB of indoor intake air temperature.

MODEL	Refrigerant piping length (one way)									
	25ft (std)	40ft	55ft	70ft	85ft	100ft	115ft	130ft	150ft	164ft
PC24EK ₁	1.0	0.981	0.968	0.952	0.940	0.925	0.913	0.900	0.886	0.874
PC30EK ₁	1.0	0.981	0.986	0.952	0.940	0.925	0.913	0.900	0.886	0.874
PC36EK ₁	1.0	0.981	0.968	0.952	0.940	0.925	0.913	0.900	0.886	0.874
PC42EK ₁	1.0	0.975	0.955	0.935	0.918	0.900	0.884	0.869	0.855	0.840

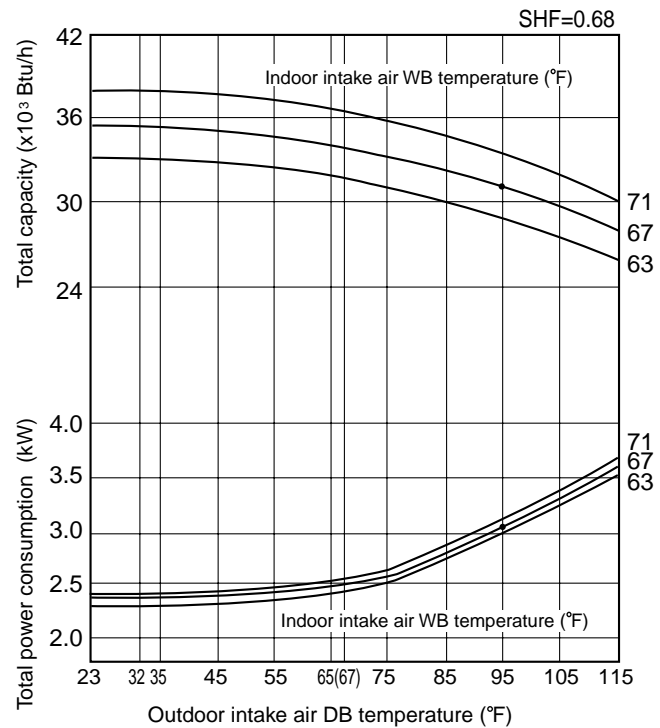
2. PERFORMANCE CURVE

NOTES : A point on the curve shows the reference point.

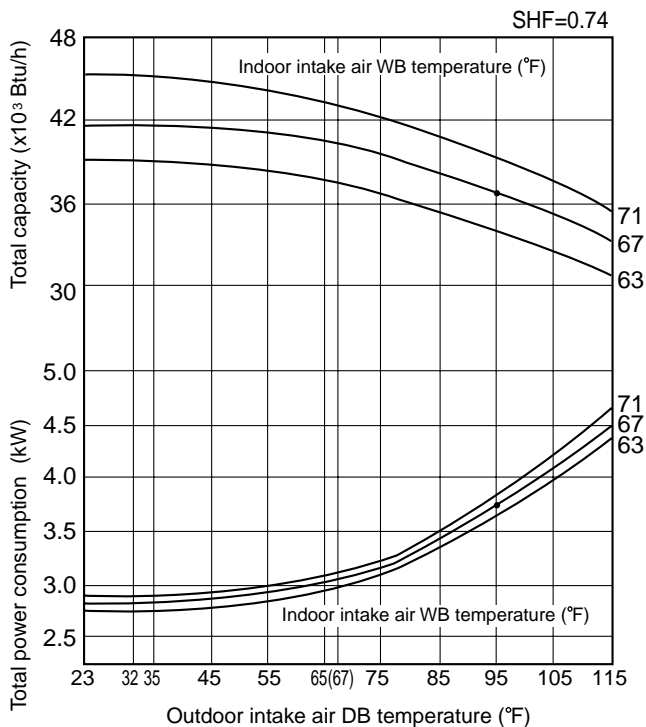
PC24EK1 COOLING CAPACITY



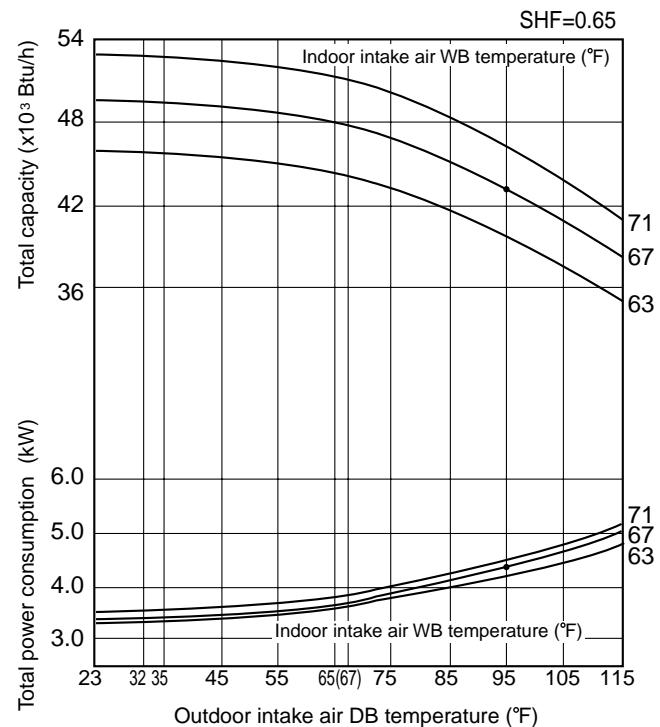
PC30EK1 COOLING CAPACITY



PC36EK1 COOLING CAPACITY



PC42EK1 COOLING CAPACITY



3. CONDENSING PRESSURE AND SUCTION PRESSURE

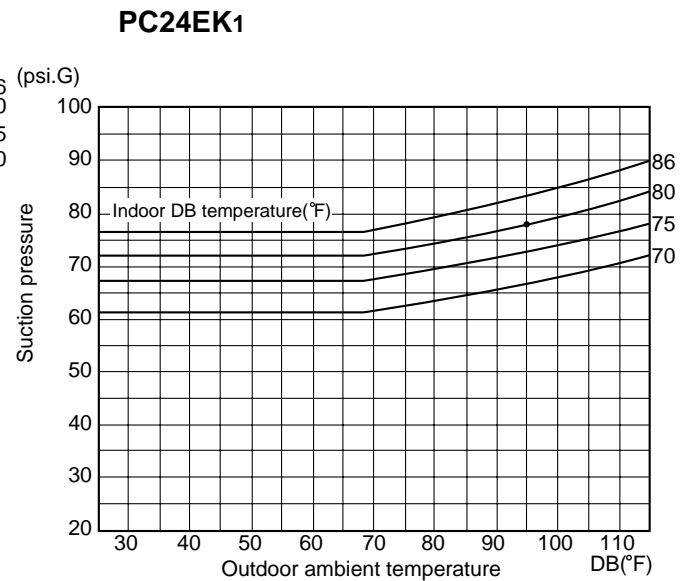
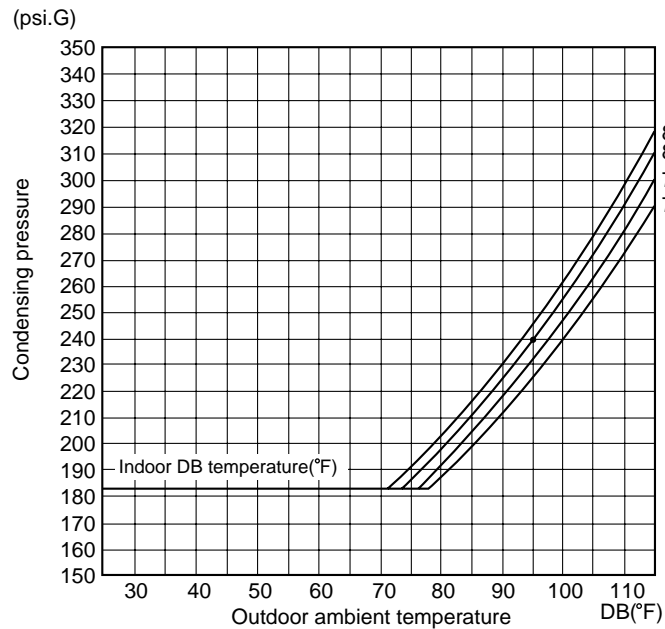
Data is based on the condition of indoor humidity 50%.

Air flow should be set at HI.

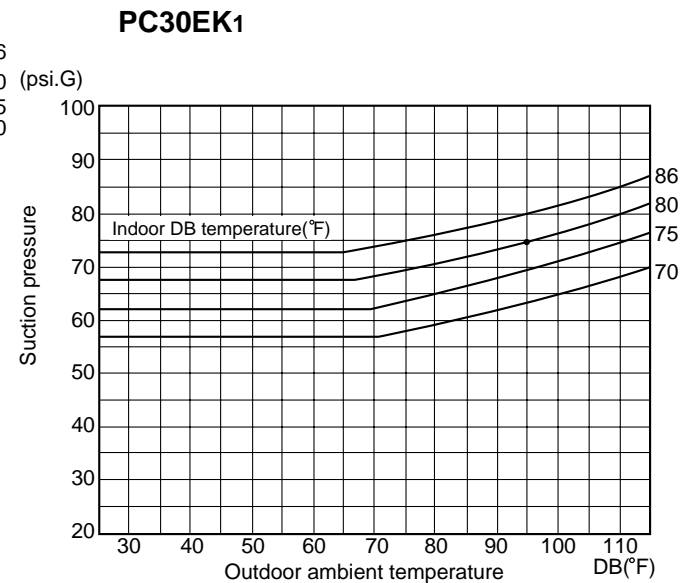
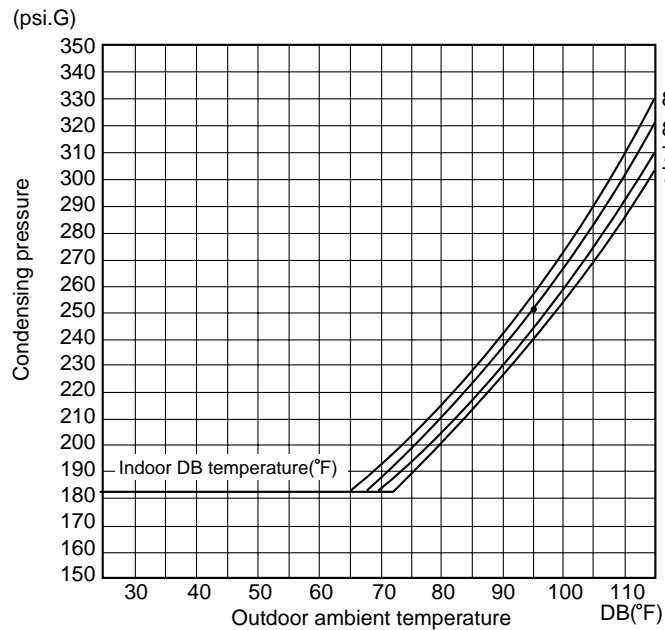
A point on the curve shows the reference point.

< Cooling mode >

PC24EK1



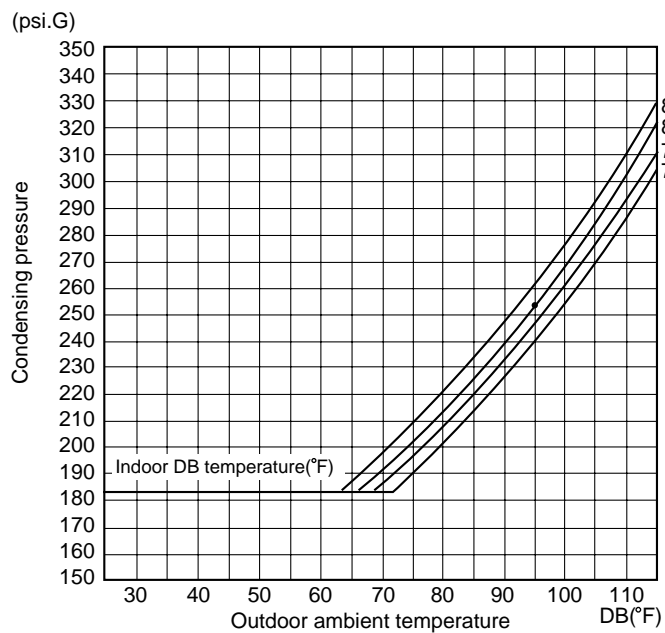
PC30EK1



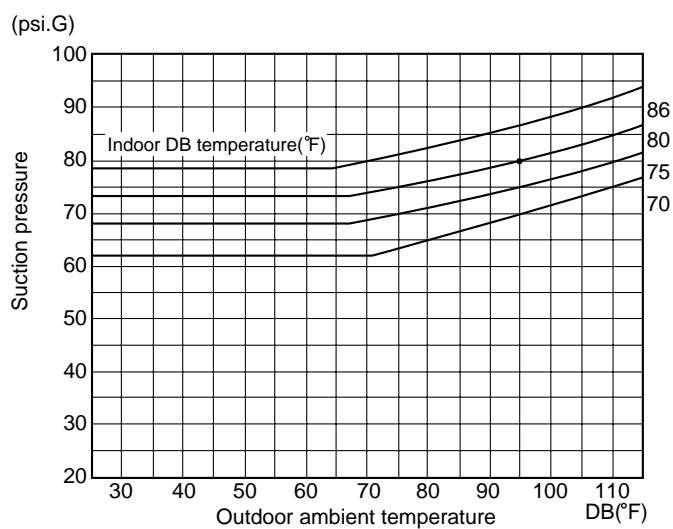
Data is based on the condition of indoor humidity 50%.
Air flow should be set at HI.
A point on the curve shows the reference point.

< Cooling mode >

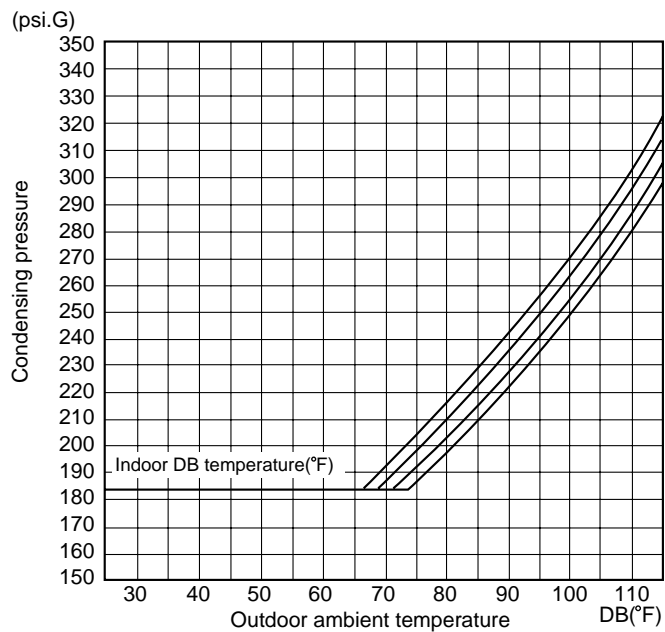
PC36EK1



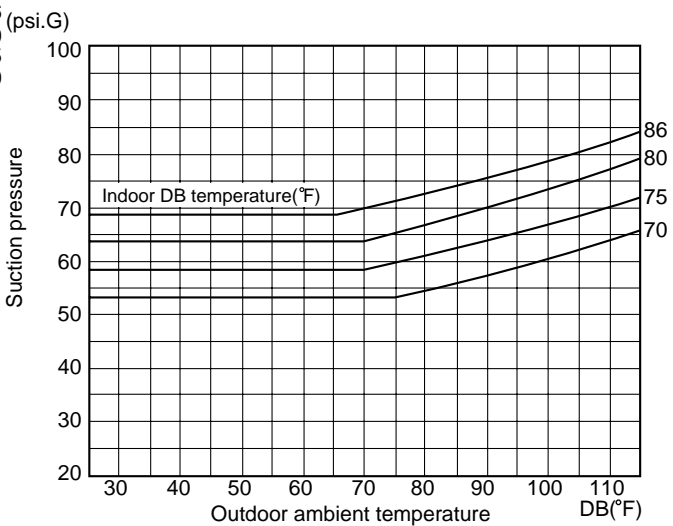
PC36EK1



PC42EK1



PC42EK1



4. STANDARD OPERATION DATA

Model				PC24EK ₁	PC30EK ₁	PC36EK ₁	PC42EK ₁
Item		Unit		Cooling	Cooling	Cooling	Cooling
Total	Capacity	Btu / h		24,000	31,000	36,500	42,500
	SHF	—		0.76	0.68	0.74	0.65
	Input	kW		2.43	3.1	3.8	4.4
Electrical circuit	INDOOR UNIT MODEL			PC24EK ₁	PC30EK ₁	PC36EK ₁	PC42EK ₁
	Power supply (V, phase, Hz)			115, 1, 60	115, 1, 60	115, 1, 60	115, 1, 60
	Input	kW		0.2	0.2	0.22	0.26
	Fan current	A		1.8	1.8	2.1	2.4
	OUTDOOR UNIT MODEL			PU24EK ₁	PU30EK ₁	PU36EK ₁	PU42EK ₂
	Power supply (V, phase, Hz)			208/230, 1, 60	208/230, 1, 60	208/230, 1, 60	208/230, 1, 60
	Input	kW		2.23	2.9	3.58	4.14
	Comp. current	A		11.5	14.0	17.5	20.0
	Fan current	A		0.65+0.65	0.65+0.65	0.75+0.75	0.8+0.8
Refrigerant circuit	Condensing pressure	psi-G		237	236	250	237
	Suction pressure	psi-G		78	75	81	71
	Discharge temp.	°F		158	167	165	168
	Condensing temp.	°F		113	113	117	113
	Suction temp.	°F		49	46	50	46
	Ref. pipe length	ft		25	25	25	25
	Refrigerant charge	—		9 lbs 15 oz	10 lbs 2 oz	10 lbs 9oz	12 lbs 9oz
Indoor side	Intake air temperature	DB	°F	80	80	80	80
		WB	°F	67	67	67	67
	Discharge air temperature	DB	°F	60	57	59	56
		WB	°F	58	55	57	55
	Fan speed (High)	rpm		1,410	1,410	1,490	1,490
	Airflow (High)	CFM		900	900	1,100	1,100
Outdoor side	Intake air temperature	DB	°F	95	95	95	95
		WB	°F	—	—	—	—
	Fan speed upper / lower	rpm		750	750	760	840
	Airflow	CFM		3,170	3,170	3,350	3,350

5. OPERATING RANGE

1) POWER SUPPLY

	Rating	Allowable voltage
Indoor unit	115V 1 phase 60Hz	Min. 103V — Max. 127V
Outdoor unit	208/230V 1 phase 60Hz	Min. 198V — Max. 253V

2) OPERATION

Function	Intake air temperature	Indoor		Outdoor	
	Condition	DB (°F)	WB (°F)	DB (°F)	WB (°F)
Cooling	Standard temperature	80	67	95	75
	Maximum temperature	95	71	115	75
	Minimum temperature	67	57	23	—
	Maximum humidity	80	75	80	75

6. OUTLET AIR SPEED AND COVERAGE RANGE

		PC24EK ₁	PC30EK ₁	PC36EK ₁	PC42EK ₁
Standard height (8.2ft)	Airflow (CFM)	1,050		1,270	
	Air speed (ft / sec.)	17.0		16.5	
	Coverage range (ft)	43		48	

- The air coverage range is the value up to the position where the air speed is 0.8ft/sec. when air is blown out horizontally from the unit at the High fan setting.

The coverage range should be used only as a general guideline since it varies according to the size of the room and furniture installed inside the room.

7. ADDITIONAL REFRIGERANT CHARGE (R22 (OZ))

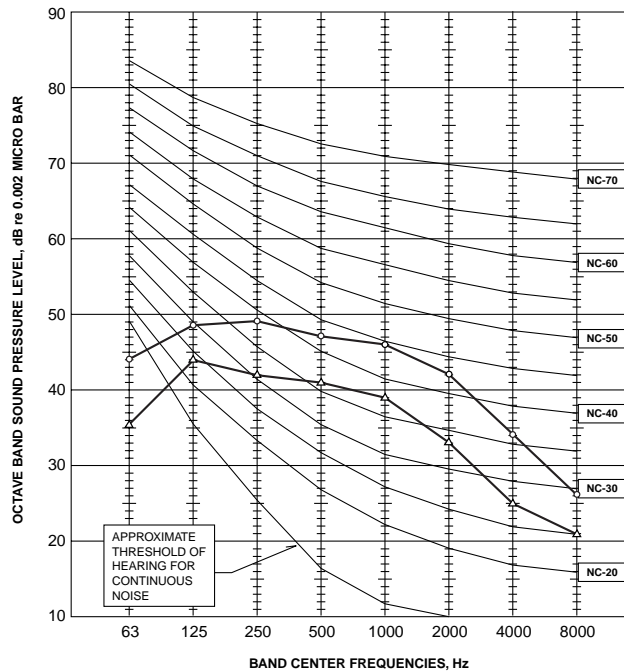
Model	Outdoor unit precharged (up to 100ft)	Refrigerant piping length (over way)									
		25ft	40ft	55ft	70ft	85ft	100ft	115ft	130ft	150ft	164ft
PC24EK ₁	9 lbs 15 oz	0	0	0	0	0	0	2	4	7	9
PC30EK ₁	10 lbs 2 oz	0	0	0	0	0	0	5	10	16	20
PC36EK ₁	10 lbs 9 oz	0	0	0	0	0	0	5	10	16	20
PC42EK ₁	12 lbs 9 oz	0	0	0	0	0	0	5	10	16	20

8. NOISE CRITERION CURVES

PC24EK₁

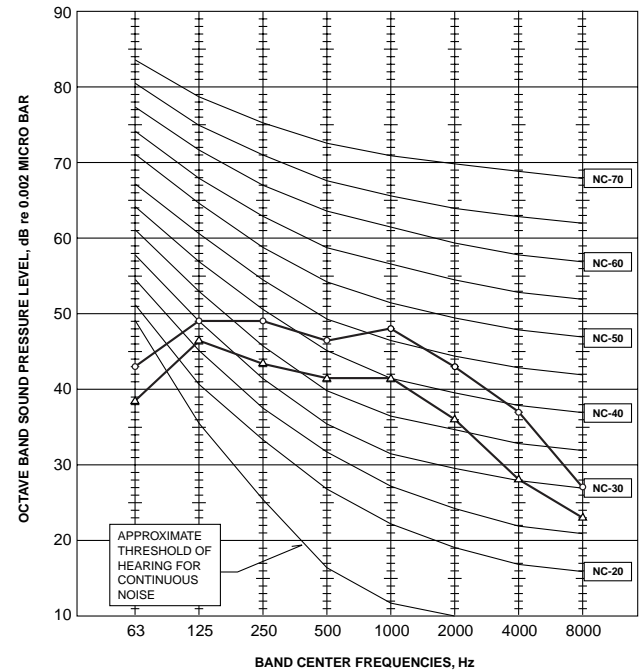
PC30EK₁

NOTCH	SPL(db(A))	LINE
Hi	50	○—○
Lo	43	△—△



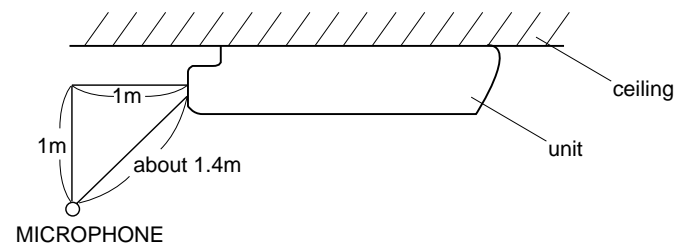
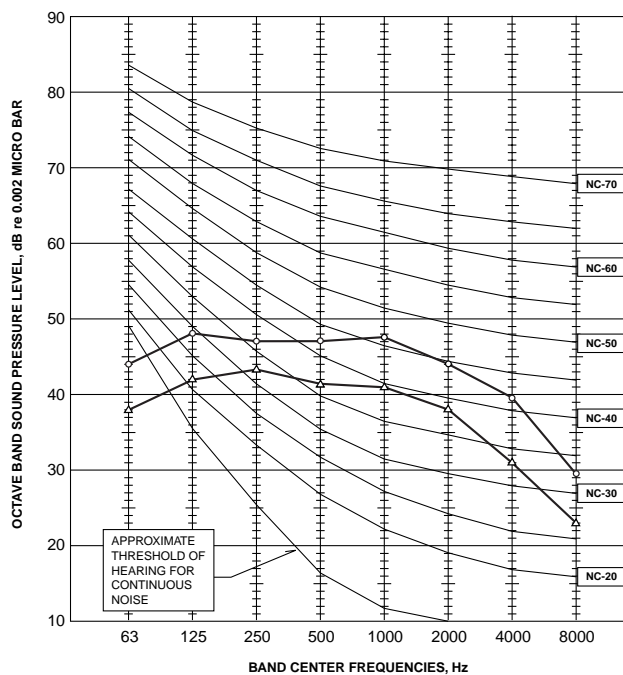
PC36EK₁

NOTCH	SPL(db(A))	LINE
Hi	51	○—○
Lo	45	△—△



PC42EK₁

NOTCH	SPL(db(A))	LINE
Hi	51	○—○
Lo	45	△—△

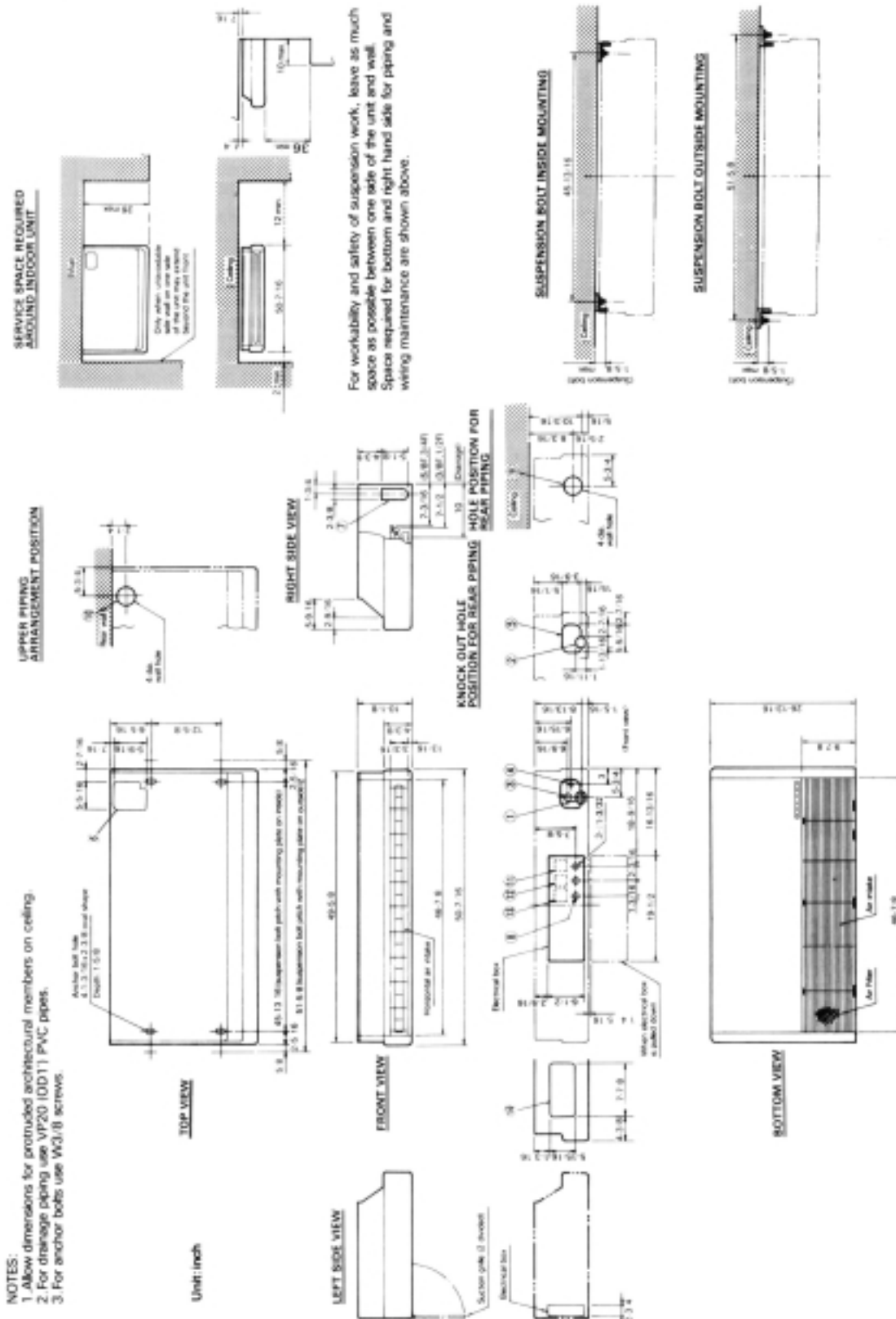


Ambient temperature 80°F

Test conditions are based on JIS Z8731

Indoor Unit
PC24/30EK₁

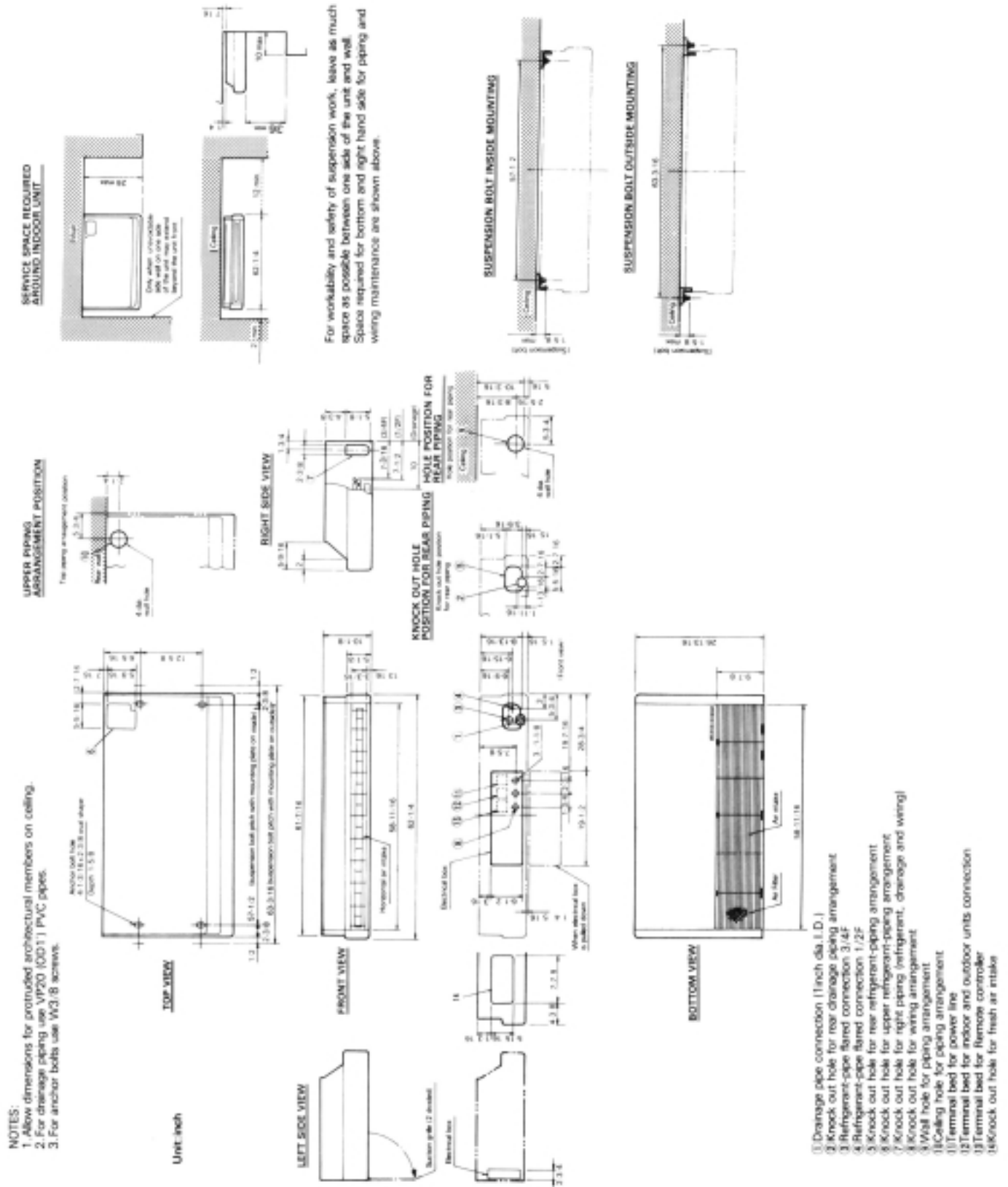
Unit : inch



- ① Drainage pipe connection (1 inch dia. I.D.)
- ② Knock out hole for rear drainage piping arrangement
- ③ Refrigerant-pipe flared connection 5/8 (PC24EK₁), 3/4F (PC30EK₁)
- ④ Refrigerant-pipe flared connection 3/8 (PC24EK₁), 1/2F (PC30EK₁)
- ⑤ Knock out hole for rear refrigerant-piping arrangement
- ⑥ Knock out hole for upper refrigerant-piping arrangement
- ⑦ Knock out hole for right piping (refrigerant, drainage and wiring)
- ⑧ Knock out hole for wiring arrangement
- ⑨ Wall hole for piping arrangement
- ⑩ Ceiling hole for piping arrangement
- ⑪ Terminal bed for power line
- ⑫ Terminal bed for indoor and outdoor units connection
- ⑬ Terminal bed for Remote controller
- ⑭ Knock out hole for fresh air intake

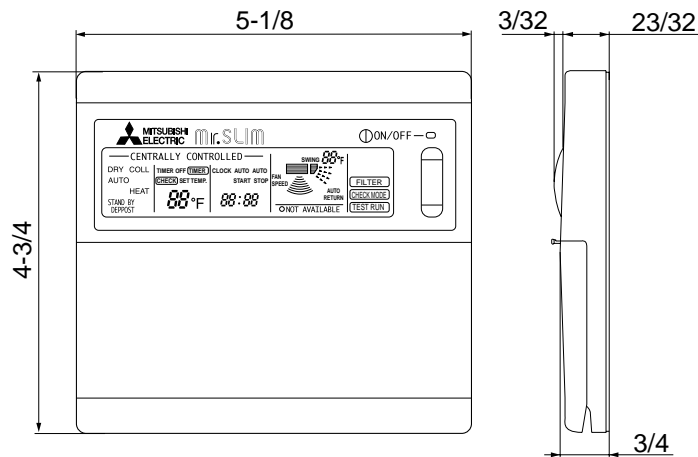
Indoor Unit PC36/42EK1

Unit : inch



Remote controller

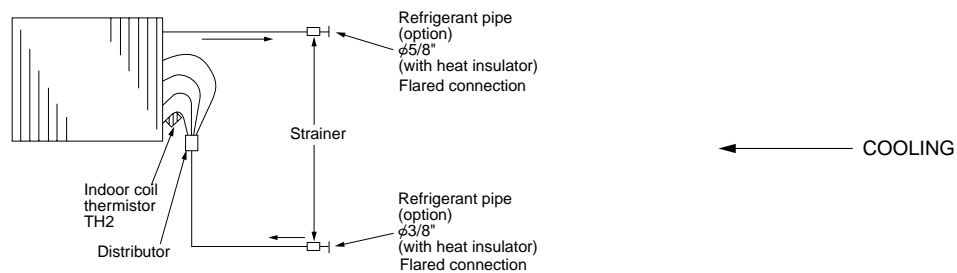
Unit : inch



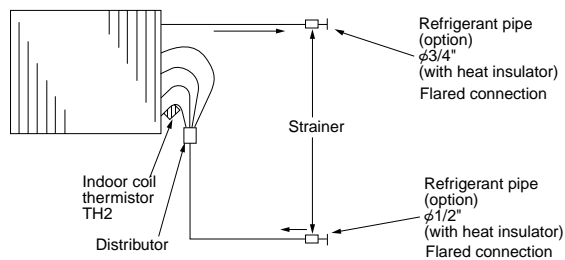
7

REFRIGERANT SYSTEM DIAGRAM

PC24EK₁

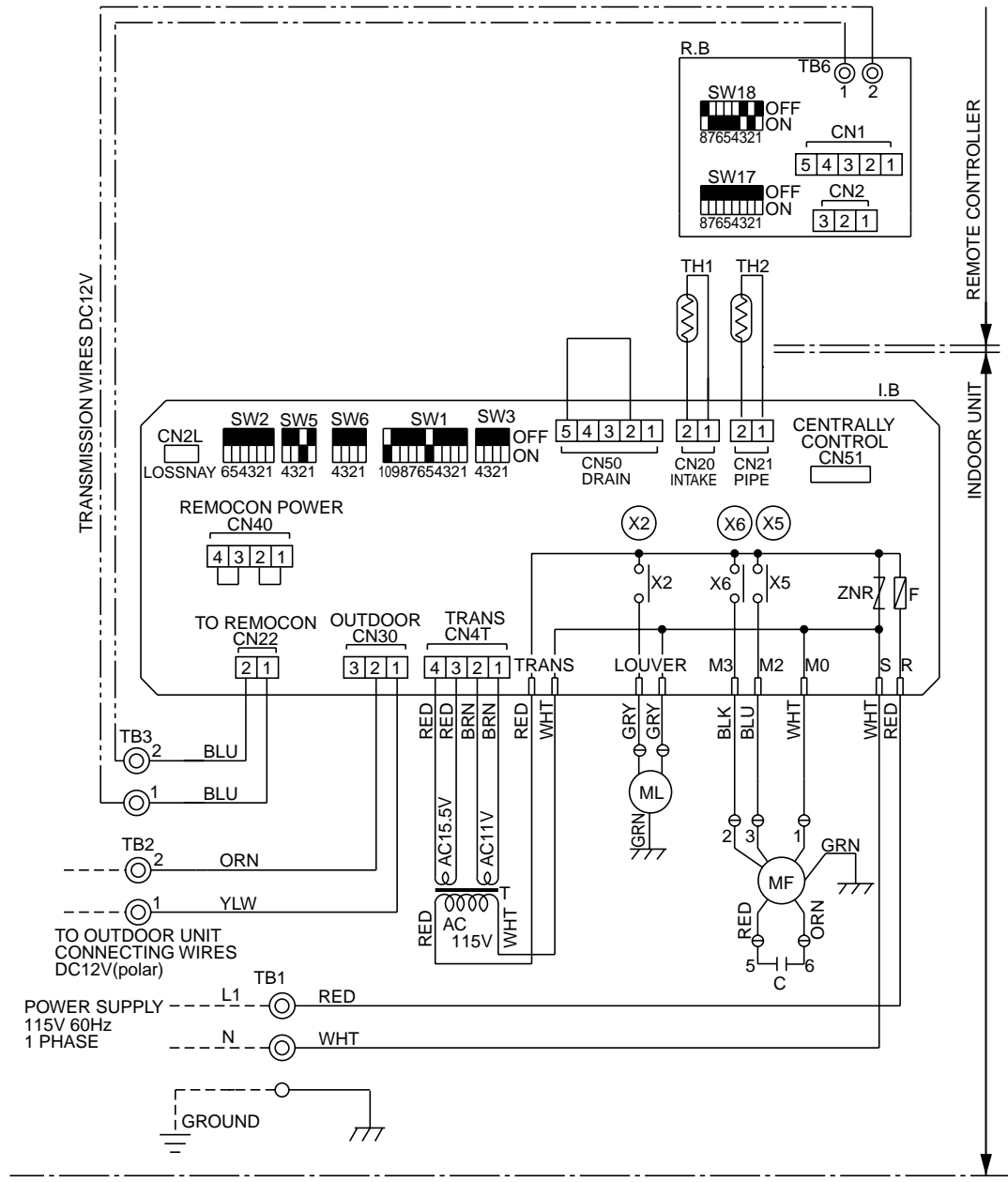


PC30/36/42EK₁



MODELS PC24EK1 PC30EK1 PC36EK1 PC42EK1 WIRING DIAGRAM

SYMBOL	NAME	SYMBOL	NAME	SYMBOL	NAME
C	FAN MOTOR CAPACITOR	R.B	REMOTE CONTROLLER BOARD	TB1-6	TERMINAL BLOCK
CN1<R.B>	PROGRAM TIMER CONNECTOR	SW1<I.B>	MODE SELECTOR SWITCH	TH1	ROOM TEMPERATURE
CN2<R.B>	REMOTE SWITCH CONNECTOR	SW2<I.B>	ADDRESS SELECTOR SWITCH	TH2	PIPE TEMPERATURE
CN51<I.B>	CENTRALLY CONTROL CONNECTOR	SW3<I.B>	EMERGENCY OPERATION SWITCH		THERMISTOR(32°F/15kΩ, 77°F/5.4kΩ)
CN2L<I.B>	LOSSNAY CONNECTOR	SW5<I.B>	MODEL SELECTOR SWITCH	X2<I.B>	LOUVER MOTOR RELAY
F<I.B>	FUSE (6A)	SW6<I.B>	MODEL SELECTOR SWITCH	X5<I.B>	FAN MOTOR RELAY
I.B	INDOOR CONTROLLER BOARD	SW17<R.B>	ADDRESS SELECTOR SWITCH	X6<I.B>	FAN MOTOR RELAY
MF	FAN MOTOR (INNER THERMOSTAT)	SW18<R.B>	FUNCTION SELECTOR SWITCH	ZNR	VARISTOR
ML	LOUVER MOTOR	T	TRANSFORMER		

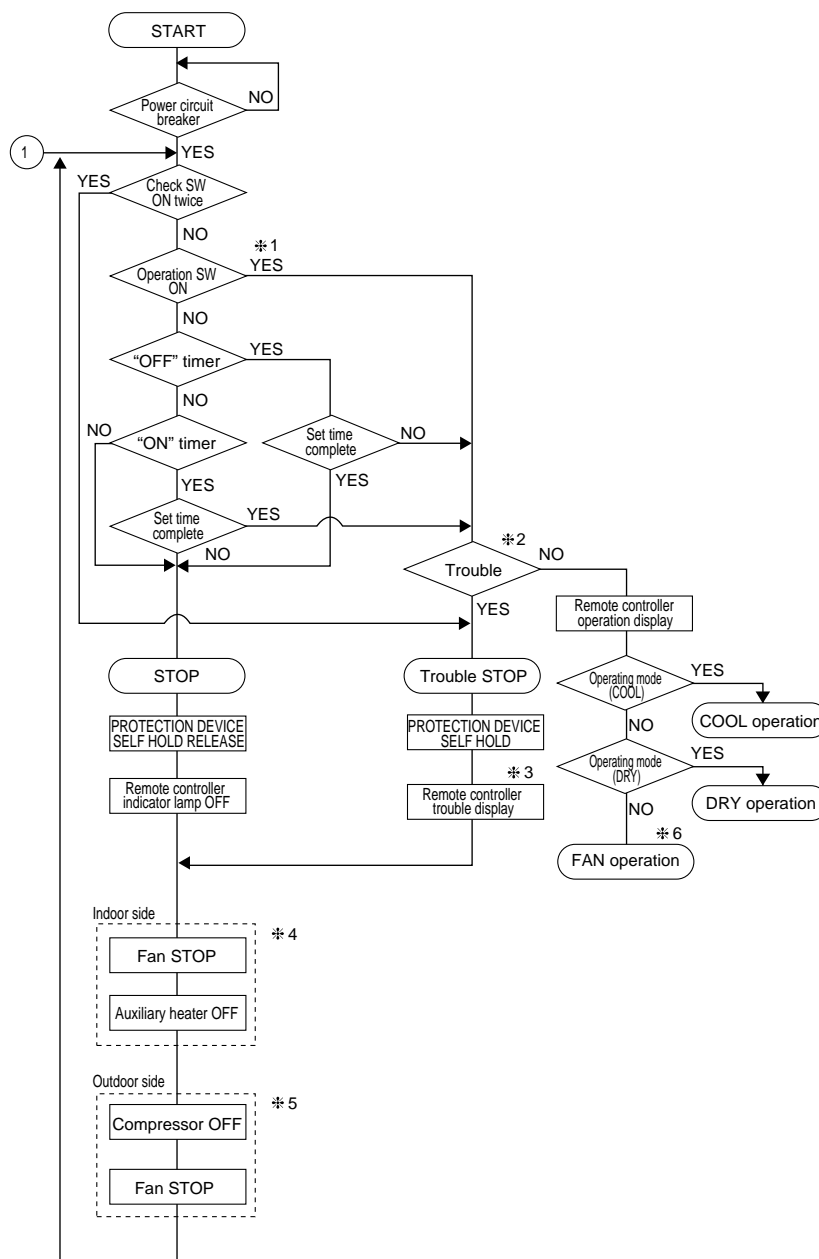


NOTES:

1. Since the outdoor side electric wiring may change be sure to check the outdoor unit electric wiring for servicing.
2. Indoor and outdoor connecting wires are made with polarities, make wiring matching terminals.
3. Symbols used in wiring diagram above are, ⊙: Terminal block, □: connector, □: PC board insertion tab.
4. Emergency operation

If a trouble occurs with either the remote controller or the indoor microcomputer and no other trouble exists, emergency operation for cooling can be performed by changing the setting of dip switch (SW3(I.B)) on the indoor controller board (emergency dry operation is not possible).

MAIN OPERATION



*1 In addition, the centralized and remote control can be operated.

*2 The modes which indicate the sources of trouble are listed below.

- E0=Signal transmitting/receiving error
- P1=Room temperature thermistor malfunction
- P2=Indoor coil thermistor malfunction
- P4=Drain sensor malfunction
- P5=Drain over flow
- P6=Coil frost/overheat protection
- P7=System error
- P8=Outdoor unit trouble

*3 The CHECK switch will show if an error has occurred in the past.

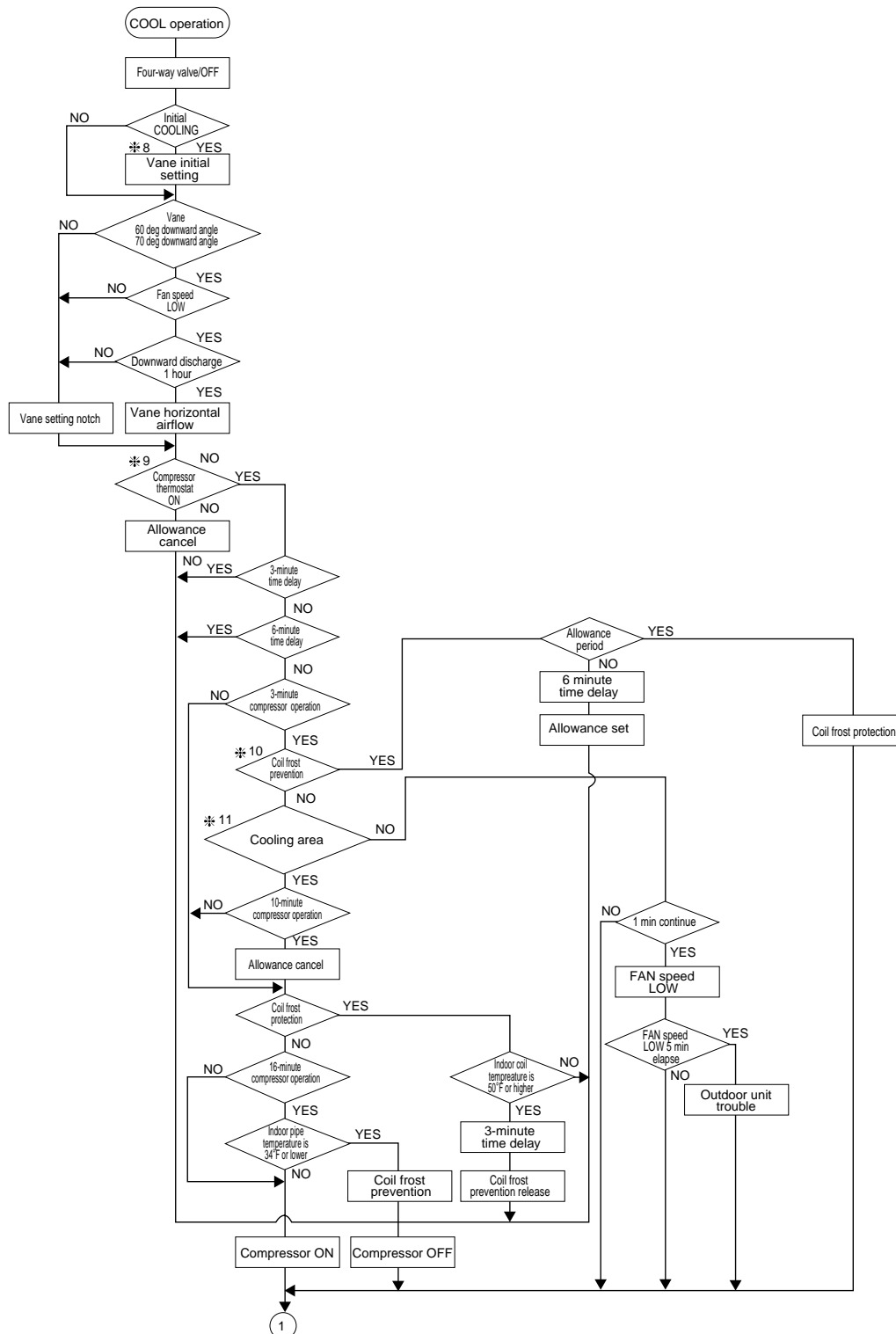
*4 Fan runs on low speed for 1 minute in order to remove overheat air.

*5 The 3-minute (6 minutes ... heating mode) time-delay functions after compressor stops.

*6 FAN or AUTO mode is selected by the indoor dip switch setting.

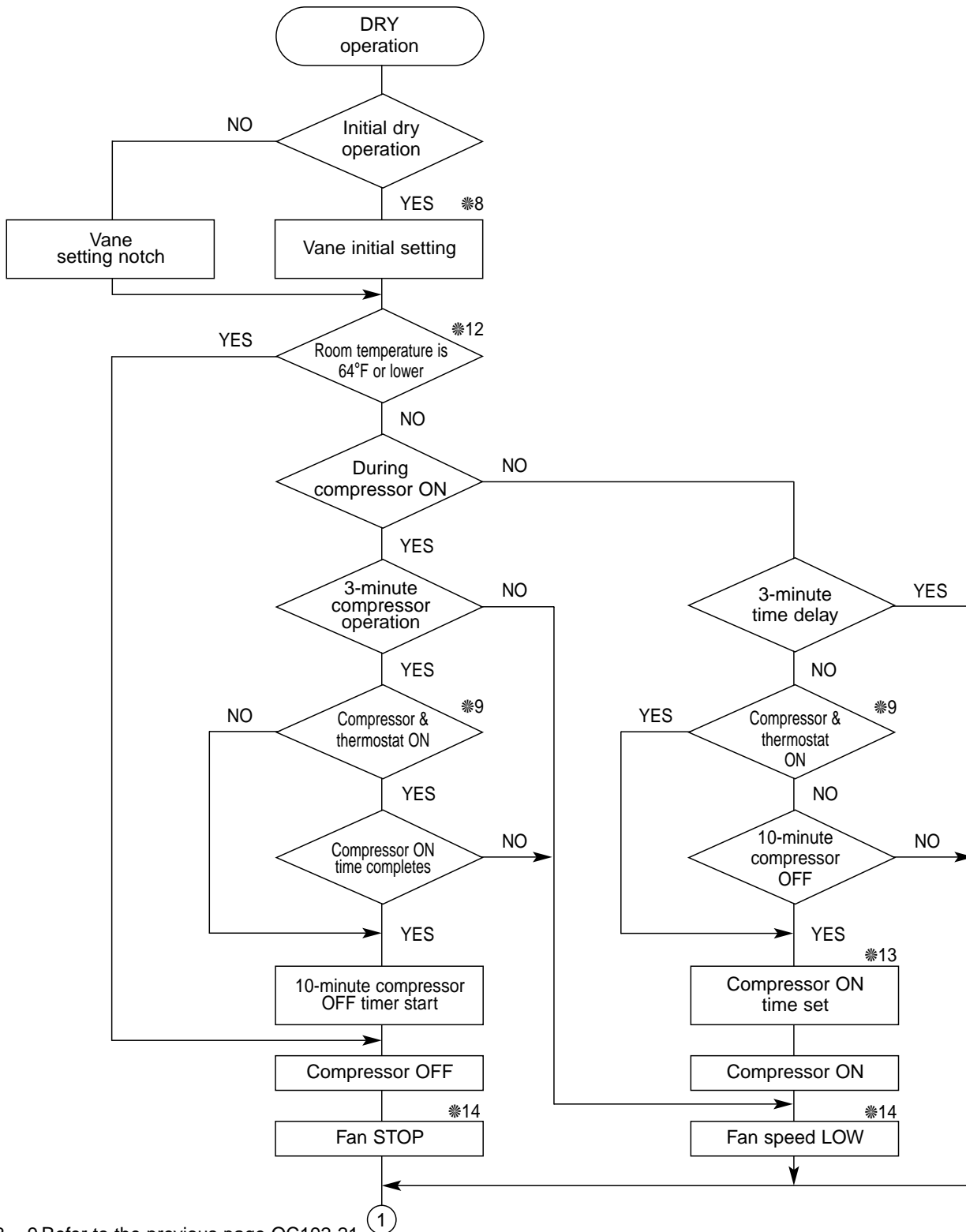
*7 In FAN mode, fan speed and vane operation depend on the remote controller setting. (Compressor is OFF.)

COOLING OPERATION



- *8 When operation stops or changes to cooling or dry mode, the auto vane turns to a horizontal angle. If operation changes during auto vane SWING, the auto vane will continue to swing.
- *9 When operating TEST RUN, the thermostat will be continuously ON.
- *10 After 3 minute compressor operation, if the indoor coil thermistor reads -5°F or below for 3 minutes, the compressor will stop for 6 minutes.
- *11 Cooling area : Indoor coil temperature is more than 5 degrees above the room temperature.
Heating area : Indoor coil temperature is more than 5 degrees below the room temperature.
FAN area : Indoor coil temperature is within 5 degrees either way of the room temperature.

DRY OPERATION



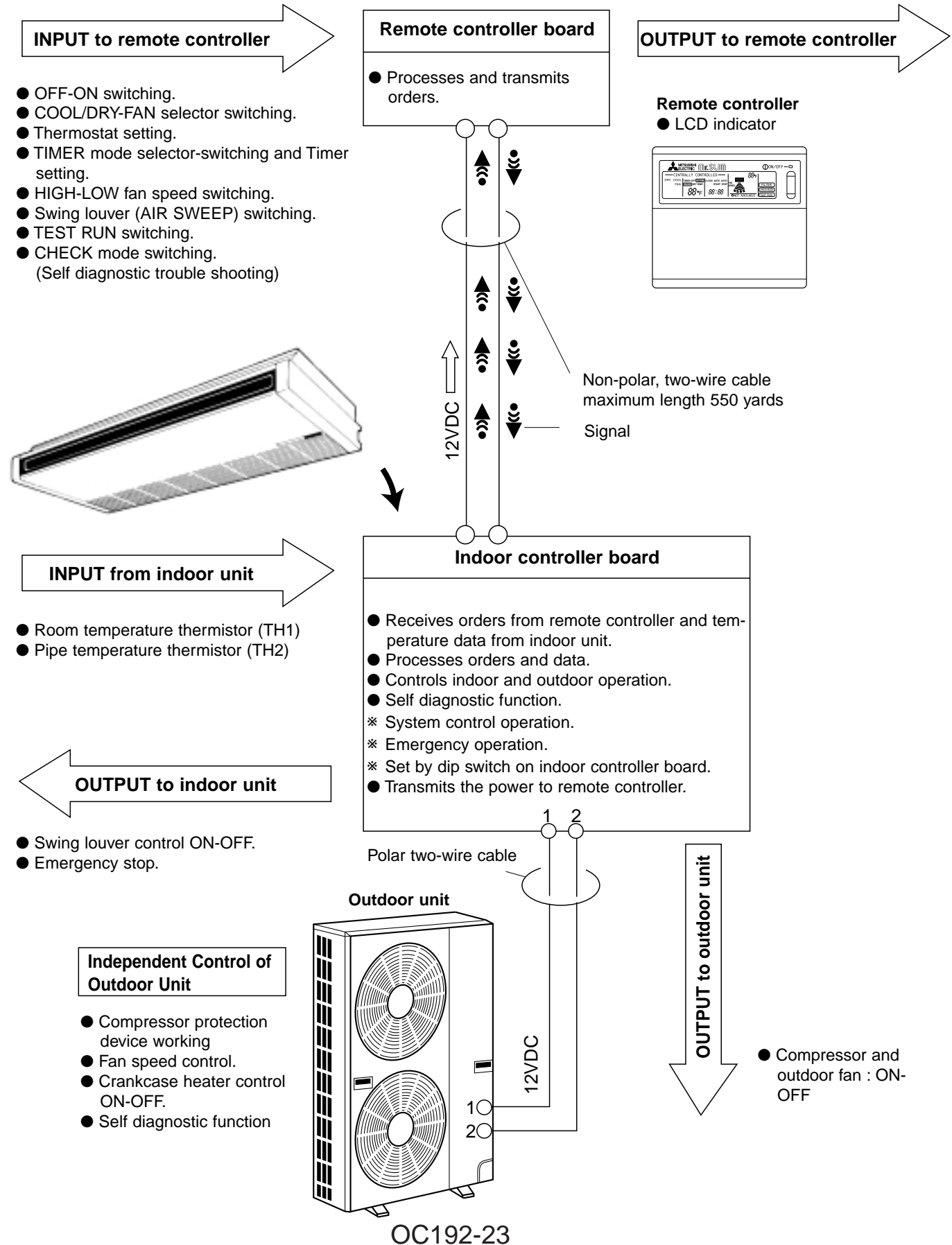
※8 ~ 9 Refer to the previous page OC192-21.

※12 When room temperature is 64°F or below, the compressor cannot operate.
When room temperature rises over 64°F, the compressor starts after a 3-minute time delay.

※13 Compressor ON time is decided by room temperature. Refer to page OC192-27

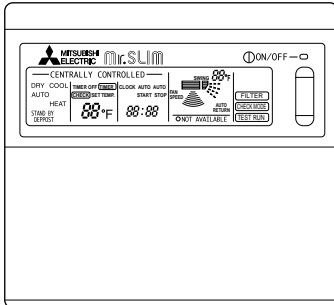
※14 In dry operation, compressor ON makes the fan speed LOW and compressor OFF stops the fan.
It is not possible to set the fan speed with the remote controller

1.OUTLINE OF MICROPROCESSOR CONTROL



2. INDOOR UNIT CONTROL

2-1 COOL operation

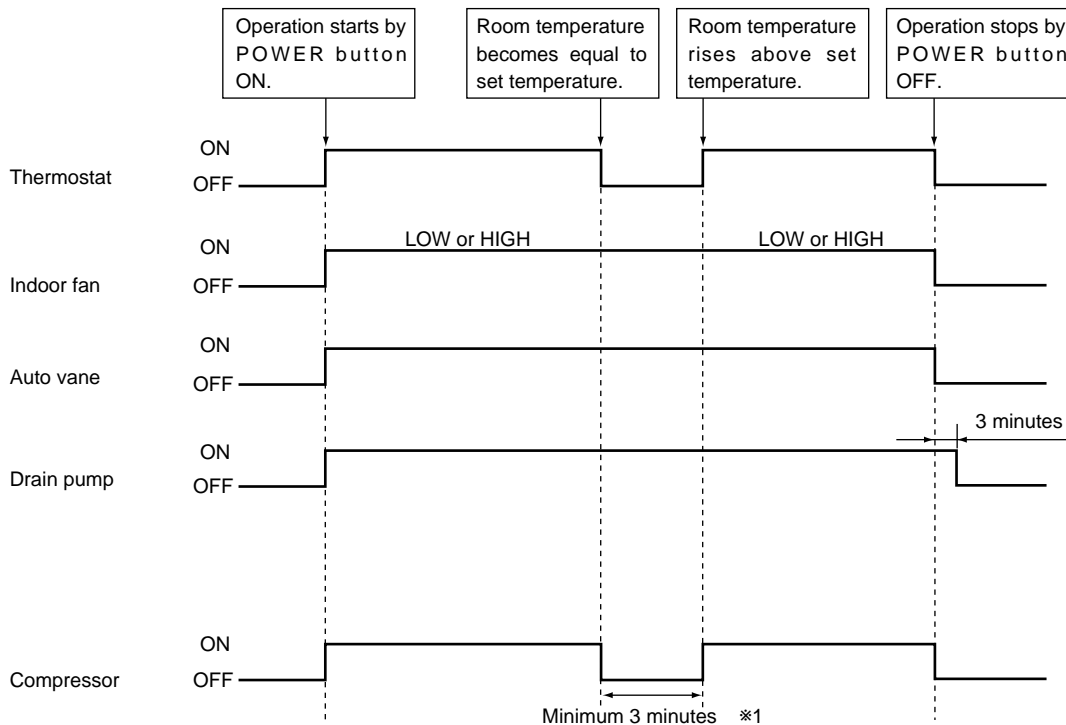


<How to operate>

- ① Press POWER ON/OFF button.
- ② Press the MODE button to display COOL.
- ③ Press the SET TEMP. button to set the desired temperature.

NOTE: Set temperature changes 2°F when the SET TEMP. button is pressed one time.
Cooling 65 to 87°F.

<COOL operation time chart>



※1 Even if the room temperature rise above the set temperature during this period, the compressor will not start until this period has ended.

(1) Compressor control

① 3-minute time delay

To prevent overload, the compressor will not start within 3 minutes after stop.

② The compressor runs when room temperature is higher than set temperature.

The compressor stops when room temperature is equal to or lower than the set temperature.

The compressor maintains the previous state when the room temperature minus the set temperature is 0 degrees or more, or lower than 2 degrees.

③ The compressor stops in check mode or during protective functions.

④ Coil frost prevention

To prevent indoor coil frost, the compressor will stop when the indoor coil thermistor (TH2) reads 34°F or below after the compressor has been continuously operated for at least 16 minutes or more. When the indoor coil temperature rises to 50°F or above, the compressor will start in a 3-minute(※2) time delay.

※2 When the indoor coil temperature is 30°F or less, the compressor starts in 6 minutes.

NOTE : By turning OFF the dip switch SW1-3 on indoor controller board, the start temperature of coil frost prevention changes from 34°F to 36°F.

⑤ Coil frost protection

When indoor coil temperature becomes 5°F or below, coil frost protection will proceed as follows.

<Start condition>

After the compressor has been continuously operated for 3 minutes or more, and the indoor coil temperature has been 5°F or below for 3 minutes, the coil frost protection will start.

<Coil frost protection>

Compressor stops for 6 minutes, and then restarts.

If the start condition is satisfied again during the first 10 minutes of compressor operation, both the indoor and outdoor units stop, displaying a check code of "P6" on the remote controller.

<Termination conditions>

Coil frost protection is released when the start condition is not satisfied again during the allowance, or when the COOL mode stops or changes to another mode.

(2) Indoor fan control

Indoor fan speed LOW/HIGH depends on the remote controller setting.

However, if an outdoor unit abnormality is detected, the indoor fan speed will be LOW, regardless of the remote controller setting.

(i) Fan speed LOW/HIGH depends on the remote controller setting regardless of the thermostat ON/OFF.

(ii) Fan speed will remain on LOW if an abnormality in outdoor unit is detected. (5 minutes)

NOTE : Fan stops immediately if the unit stops or the check mode is started.

(3) Auto vane control

(i) Frequency judgement

When the unit operates for the first time after the circuit breaker turned to ON, the frequency, 50Hz or 60Hz, is judged by the horizontality sensing switch. If the frequency cannot be judged immediately for some reason, the sensing operation continues for 10 minutes with the vane motor at ON.

If the frequency cannot be judged yet after 10-minute sensing, the vane motor turns to OFF. But the AIR DISCHARGE DIRECTION display continues to be indicated.

(ii) During cooling operation

When the cooling operation starts, the horizontal discharge is automatically set. However, the desired discharge among four modes below-listed can be selected with the AIR DISCHARGE UP/DOWN button on the remote controller.

① 100%-horizontal discharge

② 60%-downward and 40%-horizontal discharge

③ 80%-downward and 20%-horizontal discharge

④ 100%-downward discharge

NOTE: Discharge ② is available only when the fan speed is HIGH.

<AUTO RETURN>

When discharge "③" or "④" continues for 1 hour with the fan speed at LOW, the discharge direction turns to the horizontal discharge automatically.

NOTE1: After that, the discharge "③" or "④" is available by setting with the remote controller, and it continues for 1 hour.

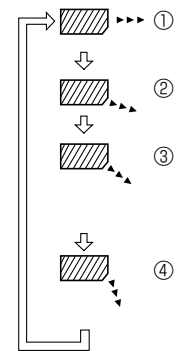
NOTE2: If the discharge direction changes from "③" or "④", the direction returns to the horizontal discharge when 1 hour has passed since the discharge "③" started.

NOTE3: If the discharge direction changes from "③" (or "④") to the horizontal discharge, the 1-hour timer to return the horizontal discharge is canceled at that time.

(iii) During the operation OFF, the auto vane is in the horizontal position.

(iv) When the vane motor is out of order or the connector is badly connected, the air discharge display of the remote controller continues.

<Remote controller display>



Changes by pushing the
AIR DISCHARGE
UP/DOWN button:

(4) Detecting abnormalities in the outdoor unit

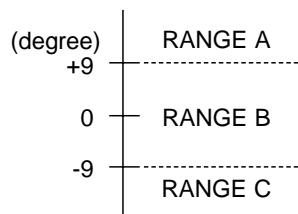
After the compressor has been continuously operated for 3 minutes, if the difference between the indoor coil temperature and room temperature is out of RANGE C for 1 minute, the indoor fan speed will turn to LOW. Five minutes later, if the difference is still out of RANGE C, the outdoor unit is functioning abnormally. Thus, the compressor stops and check code "P8" appears on remote controller.

RANGE A : Indoor coil temperature is more than 9 degrees above room temperature.

RANGE B : Indoor coil temperature is within 9 degrees either way of room temperature.

RANGE C : Indoor coil temperature is more than 9 degrees below room temperature.

Indoor coil temperature
minus room temperature



(5) Drain pump control

The drain pump works in COOL or DRY operation. The drain pump does not work in check mode.

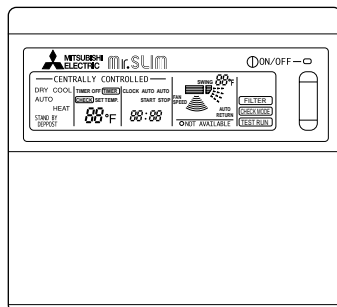
<Drain sensor>

When both the drain pump and unit are operating, the drain sensor detects the temperature. This temperature tells whether the drain water level is above or under the drain sensor. If the drain water level rises above the drain sensor due to a drain pump malfunction, the unit will stop operating in order to prevent drain from overflowing. The check code "P5" on the remote controller will display this occurrence.

(6) Dew prevention heater

To prevent dew from accumulating on the grille, the dew prevention heater is continuously ON during COOL operation. It is independent of the thermostat ON/OFF.

2-2 DRY operation

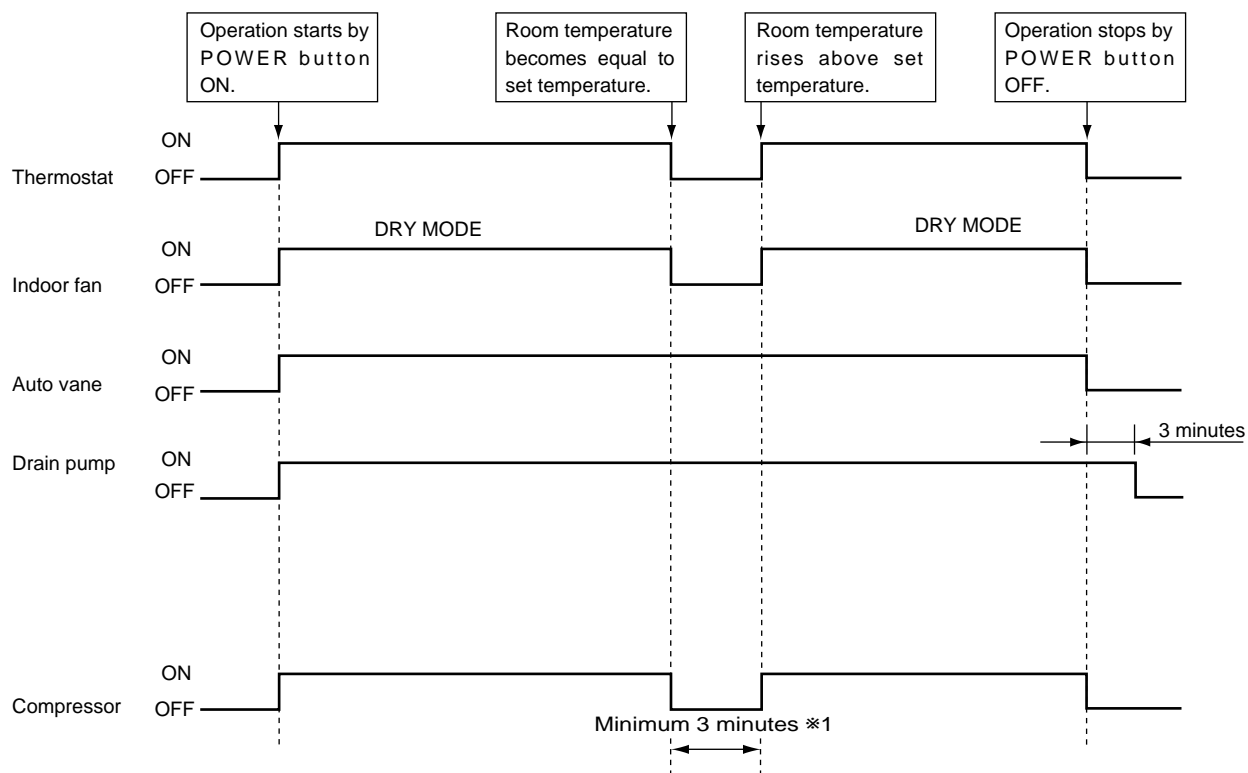


<How to operate>

- ① Press POWER ON/OFF button.
- ② Press the MODE button to display "DRY"
- ③ Press the SET TEMP. button to set the desired temperature.

NOTE: The set temperature changes 2°F when the SET TEMP. button is pressed one time.
Dry 64 to 86°F

<DRY operation time chart>



*1 Even if the room temperature rises above the set temperature during this period, the compressor will not start until this period has ended.

(1) Compressor control

① 3-minute time delay

To prevent overload, the compressor will not start within 3 minutes after stop.

② The compressor runs when room temperature is higher than set temperature.

The compressor stops when room temperature is equal to or lower than the set temperature.

The compressor maintains the previous state when the room temperature minus the set temperature is 0°F or more, or lower than 2°F.

③ The compressor stops in check mode or during protective functions.

④The compressor will not start when the room temperature is 64°F or below.

The compressor starts intermittent operation when the power is turned ON with room temperature above 64°F. The compressor ON/OFF time depends on the thermostat ON/OFF and the following room temperatures. After 3-minute compressor operation,

- If the room temperature thermistor reads above 85°F with thermostat ON, the compressor will operate for 6 more minutes and then stop for 3 minutes.

- If the room temperature thermistor reads 79°F~82°F with thermostat ON, the compressor will operate for 4 more minutes and then stop for 3 minutes.

- If the room temperature thermistor reads 75°F~79°F with thermostat ON, the compressor will operate for 2 more minutes and then stop for 3 minutes.

- If the room temperature thermistor reads below 75°F with thermostat ON, the compressor will stop for 3 minutes.

- If the thermostat is OFF regardless of room temperature, the compressor will stop for 10 minutes.

⑤Coil frost protection

Coil frost protection in DRY operation is the same as in COOL operation.

⑥Coil frost prevention

Coil frost prevention does not operate in DRY operation.

(2) Indoor fan control

The indoor fan runs on LOW speed during compressor operation. The fan speed cannot be changed with the remote controller. Also, the indoor fan does not run during compressor OFF.

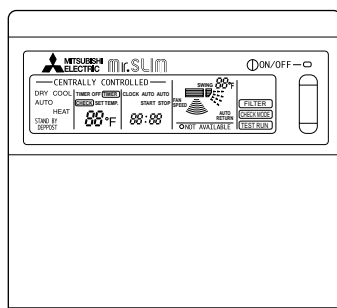
(3) Auto vane & drain pump controls

Same as in COOL operation

(4) Detecting abnormalities in the outdoor unit

An abnormality in the outdoor unit can not be detected in DRY operation.

2-3 Auto vane control



<How to operate>

To change the air flow direction, press AIR DISCHARGE button.

①	②	③	④
100% horizontal	60% downward and 40% horizontal	80% downward and 20% horizontal	100% downward

(1) Frequency judgement

When the unit operates for the first time after the circuit breaker turned to ON, the frequency, 50Hz or 60Hz, is judged by the horizontality sensing switch. If the frequency cannot be judged immediately for some reason, the sensing operation continues for 10 minutes with the vane motor at ON.

If the frequency cannot be judged yet after 10-minute sensing, the vane motor turns to OFF. But the AIR DISCHARGE DIRECTION display continues to be indicated.

(2) During cooling operation

When the cooling operation starts, the horizontal discharge is automatically set. However, the desired discharge among four modes below-listed can be selected with the AIR DISCHARGE UP/DOWN button on the remote controller.

- ① 100%-horizontal discharge
- ② 60%-downward and 40%-horizontal discharge
- ③ 80%-downward and 20%-horizontal discharge
- ④ 100%-downward discharge

NOTE: Discharge ② is available only when the fan speed is HIGH.

<AUTO RETURN>

When discharge "③" or "④" continues for 1 hour with the fan speed at LOW, the discharge direction turns to the horizontal discharge automatically.

NOTE1: After that, the discharge "③" or "④" is available by setting with the remote controller, and it continues for 1 hour.

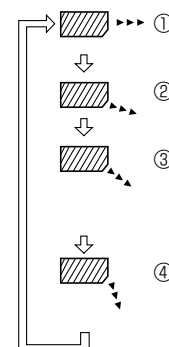
NOTE2: If the discharge direction changes from "③" or "④", the direction returns to the horizontal discharge when 1 hour has passed since the discharge "③" started.

NOTE3: If the discharge direction changes from "③" (or "④") to the horizontal discharge, the 1-hour timer to return the horizontal discharge is canceled at that time.

(3) During the operation OFF, the auto vane is in the horizontal position.

(4) When the vane motor is out of order or the connector is badly connected, the air discharge display of the remote controller continues.

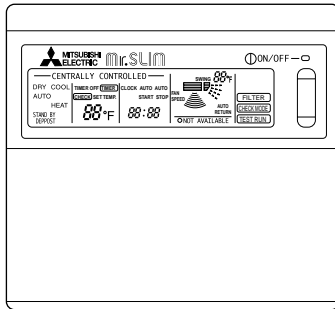
<Remote controller display>



Changes by pushing the AIR DISCHARGE UP/DOWN button:

2-4 TIMER operation

WIRED REMOTE CONTROLLER



<Timer setting example>



<Timer function>

AUTO STOPThe air conditioner stops after the set time lapses.

AUTO STARTThe air conditioner starts after the set time lapses.

AUTO OFFTimer is not active.

<How to operate>

1. Press POWER ON/OFF button.
2. Press "TIMER ON/OFF" button to select AUTO STOP or AUTO START.
3. Press "CLOCK/TIMER" button to set desired time.
Time setting is in 1 hour units for up to 24 hours.
Each time TIMER SET button is pressed, set time increases by 1 hour. When TIMER SET button is pressed and held, the set time increases by 1 hour every 0.5 seconds.
4. To cancel the timer operation, press POWER ON/OFF button.

This setting will stop the operation in 8hours.
With the lapse of time, time display changes in 1hour units,
showing remaining time.

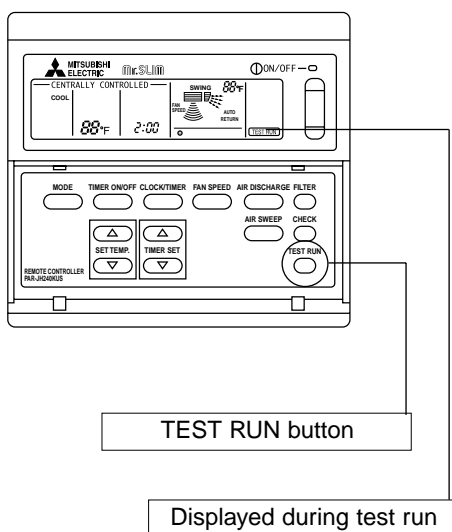
2-5 Test run

<Before test run>

- After installing, wiring, and piping the indoor and outdoor units, check for refrigerant leakage, looseness in power supply or control wiring, and mistaken polarity.
- Use a 500-volt measure to check the resistance between the power supply terminal block and ground to make sure that it is at least 1.0MΩ.

Attention:

Do not use the air conditioner if resistance is less than 1.0MΩ.



<How to operate>

1. Turn ON main breaker.
2. Press TEST RUN button twice. "TEST RUN" is displayed on remote controller.
3. Select "COOL" with MODE button to check that cool air is beginning discharged.
Select "HEAT" with MODE button to check that warm air is beginning discharged.(after a while)
4. Select LOW/HIGH with FAN SPEED button to check that the fan speed changes properly.
5. Press AIR DISCHARGE button to check auto vane operation.
6. Check outdoor fan operation.
7. Check compressor operation referring to the indoor coil temperature code displayed on the remote controller.
8. After checking, press the ON/OFF button.

The test run works for 2 hours and stops automatically.
To cancel the test run, press ON / OFF button or TIMER ON / OFF button.

(1) Indoor coil temperature code

During the test run, the indoor coil temperature code from 1 to 15 is displayed on the remote controller instead of room temperature. The code should fall with the lapse of time in normal COOL operation, and should rise in normal HEAT operation.

Code	1	2	3	4	5	6	7	8
Indoor coil temperature	-40~34°F	~50°F	~59°F	~68°F	~77°F	~86°F	~95°F	~104°F
Code	9	10	11	12	13	14	15	
Indoor coil temperature	~113°F	~122°F	~131°F	~140°F	~158°F	~194°F	Thermistor abnormality	

(2) Trouble during test run

- If the unit malfunctions during the test run, refer to section 10 in this manual entitled "TROUBLESHOOTING."
- When the optional program timer is connected to the conditioner, refer to its operating instructions.

2-6 Emergency operation

When the remote controller or microprocessor malfunctions but all other parts are normal, emergency operation is started by setting the dip switch SW3 on the indoor controller board.

<Before emergency operation>

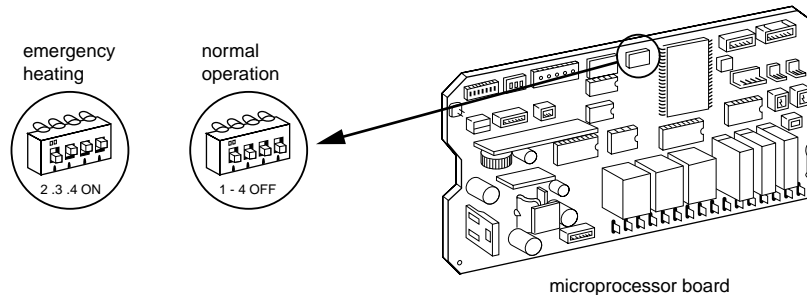
1. Make sure the compressor and the indoor fan are operating normally.
2. Locate the defect with the self-diagnostic function. When the self-diagnostic function indicates "protective function is working", release the protective function before starting the emergency operation.

CAUTION: When the self-diagnostic function indicates a check code of "P5" (drain pump malfunction), DO NOT start the emergency operation because the drain may overflow.

<How to operate>

1. For emergency cooling, set the dip switch SW3-1 to ON and SW3-2 to OFF.

SW3 setting



2. Turn ON the outdoor unit breaker and then ON the indoor unit breaker.
Emergency operation will now start.
3. During emergency operation, the indoor fan operates on high speed, the auto vanes do not operate.
4. To stop emergency operation, turn OFF the indoor unit breaker.
5. Movements of the vanes do not work in emergency operation, therefore you have to slowly set them manually to the appropriate position.

NOTE: The remote controller POWER ON/OFF button can not start/stop emergency operations.

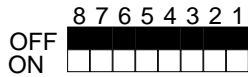
CAUTION: Do not use emergency cooling for more than 10 hours, as the indoor coil may freeze.

3 DIP SWITCH FUNCTIONS

Each figure shows the initial setting by factory.

3-1 On remote controller board

(1) SW17(Address selector)



SW17-1 ~ 6) Switch for address setting

SW17-7) When two remote controllers are used, this switch sets the controller function.

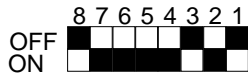
OFF : The remote controller is set as a main controller.

ON : The remote controller is set as a sub controller.

SW17-8) Switch for system back-up

This switch is not available for series PC.

(2) SW18 (Model selector)



SW18-1) Switch for timer mode setting

OFF : Single day

ON : Timer every day

SW18-2) Switch for filter sign display

OFF : Filter sign absent

ON : Filter sign present

SW18-3) Switch for filter sign time setting

OFF : 100Hr

ON : 2500Hr

SW18-4) Switch for temperature unit

OFF : °C (Celsius)

ON : °F (Fahrenheit)

SW18-5) Switch for HEAT display

This switch is not available PC

SW18-6) Switch for auto vane display

OFF : Auto vane display present

ON : Auto vane display absent

SW18-7) Switch for swing display

OFF : Swing display present

ON : Swing display absent

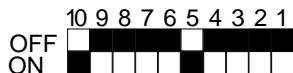
SW18-8) Switch for louver display

OFF : Louver display present

ON : Louver display absent

3-2 On indoor controller board

(1) SW1 (Mode selector)



SW1-1) Switch to change over between FAN mode and AUTOMATIC COOLING-HEATING CHANGE OVER mode

OFF : Fan mode for cooling-only models including series PC.

ON : AUTOMATIC COOLING-HEATING CHANGE OVER mode for heat pump models.

SW1-2) Switch to change over louver display

OFF : Swing

ON : Rotary

SW1-3) Switch for auto vane

OFF : Unit without auto vane

ON : Unit with auto vane

SW1-4) Switch for drain pump(Drain lift-up mechanism)

OFF : The drain pump works in only cooling mode.

ON : The drain pump works in both cooling and heating mode. (For heat pump models)

SW1-5) Switch to change the temperature to start coil frost prevention

OFF : 36°F (For previous special models)

ON : 34°F (For For all current models)

- SW1-6) Switch for set temperature adjustment in heating mode
This is not available for series PC.
- SW1-7) Switch for fan speed during thermostat OFF in heating mode
This is not available for series PC.
- SW1-8) Switch for fan motor operation in heating mode
This is not available for series PC.
- SW1-9) Switch for outdoor unit abnormality detection
OFF : When abnormality occurs, it is detected.
ON : Even if abnormality occurs, it is not detected.
- SW1-10) Switch for AUTO RESTART FUNCTION
OFF : This function does not work.
ON : This function works.

(2) SW2 (Address selector)

	6	5	4	3	2	1
OFF						
ON						

Use SW2 to set unit-address for group control.

(3) SW3 (Emergency operation switch)

Normal operation(initial setting) For emergency cooling

	4	3	2	1
OFF				
ON				

	4	3	2	1
OFF				
ON				

(4) SW5 (Model selector)

	4	3	2	1
OFF				
ON				

- SW5-1) OFF : For models without automatic swing mechanism
ON : For models with automatic swing mechanism
- SW5-2) OFF : For models with heating mode and cooling mode
ON : For models with only cooling mode including PC
- SW5-3) Not yet used
- SW5-4) OFF : LOSSNAY on air intake
ON : LOSSNAY air intake

(5) SW6 (Model selector)

	4	3	2	1
OFF				
ON				

SW6 is set on site for twin/triple control. This switch is not available for series PC

4 INDOOR FAN CONTROL

Indoor fan relay output.

(a) During fan ON

The indoor fan relay turns ON. One second later, the phase control will start.

(b) During fan OFF

The phase control turns OFF. One second later, the indoor fan relay will turn OFF.

1. REMOTE CONTROLLER DISPLAY ABNORMALITY

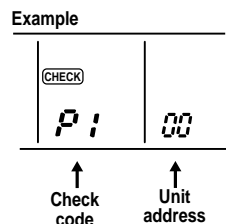
Display abnormality	Cause	Check points																				
The display “centrally controlled” on remote controller does not disappear.	1) Wrong address setting of remote controller/indoor controller board. 2) Timer adapter is connected to the remote controller. 3) Signal transmission error between indoor unit and remote controller.	1) Check the address setting of remote controller and indoor controller. 2) Check if the timer adapter is used correctly. 3) ① Turn another remote controller's DIP SW17-7 ON to make it sub controller. ② Connect the sub controller to the unit, and turn circuit breaker ON. ● If the display “centrally controlled” disappears, replace the original remote controller. ● If the display remains the same, replace the indoor controller board.																				
When remote controller POWER switch is turned to ON, the check code “E0”appears.	1) Signal transmission error between indoor unit and remote controller	1) ① Connect a sub remote controller. ② Turn circuit breaker ON. If the display “centrally controlled” remains, replace the indoor controller board. ③ If the display disappears, turn the remote controller POWER switch ON and check as follows. <table><tr><td></td><td>Remote controller</td><td>Sub remote controller</td><td>Malfunction</td></tr><tr><td>1</td><td>Operating Display</td><td>E0 Display</td><td>Malfunction of Indoor Unit</td></tr><tr><td>2</td><td>Operating Display</td><td>Operating Display</td><td>Malfunction of Remote controller</td></tr><tr><td>3</td><td>No Display</td><td>E0 Display</td><td>Malfunction of Indoor Unit and Remote Controller</td></tr><tr><td>4</td><td>No Display</td><td>Operating Display</td><td>Malfunction of Remote controller</td></tr></table>		Remote controller	Sub remote controller	Malfunction	1	Operating Display	E0 Display	Malfunction of Indoor Unit	2	Operating Display	Operating Display	Malfunction of Remote controller	3	No Display	E0 Display	Malfunction of Indoor Unit and Remote Controller	4	No Display	Operating Display	Malfunction of Remote controller
	Remote controller	Sub remote controller	Malfunction																			
1	Operating Display	E0 Display	Malfunction of Indoor Unit																			
2	Operating Display	Operating Display	Malfunction of Remote controller																			
3	No Display	E0 Display	Malfunction of Indoor Unit and Remote Controller																			
4	No Display	Operating Display	Malfunction of Remote controller																			
When remote controller POWER switch is turned to ON, operating display appears, but disappears soon.	1) Short circuit of indoor/outdoor connecting wire 2) Short circuit of transmission wire. 3) Wrong operation of remote controller due to noise wave emitted by other appliances.	1), 2) Check the wire 3) Turn the circuit breaker OFF, and then turn ON. If the remote controller remains abnormal, despite the above measures, replace the indoor controller board.																				
Despite turning POWER switch ON, the remote controller display does not appear.	1) Damaged remote controller. 2) Short circuit of transmission wire. 3) Bad contact of indoor CN40. 4) CN40 is attached to a sub unit. 5) Damaged transformer. 6) Bad contact of CN4T. 7) Broken fuse. 8) Circuit breaker OFF.	1) Measure the voltage between terminals of remote controller. If no voltage, remove the terminals and measure the voltage between wires. If the voltage is between 6VDC and 12V, replace the remote controller. 2) ~ 8) Check each point. If normal, replace the indoor controller board.																				

2. SELF DIAGNOSTIC FUNCTION WITH REMOTE CONTROLLER

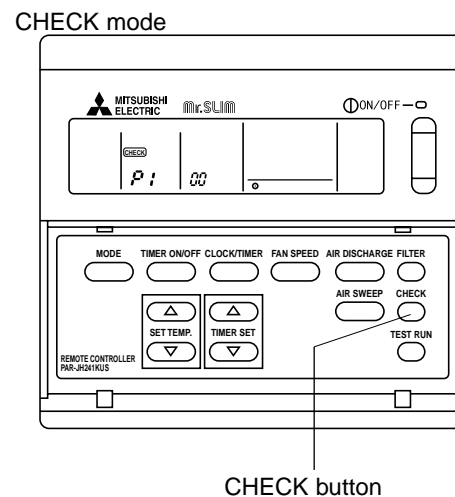
2-1 When malfunction occurs during operation

When a malfunction occurs, the indoor and outdoor units stop and the malfunction is displayed on the LCD of the remote controller.

- (1) ON the set temperature display part, "CHECK" appears, and the unit address and the check code are displayed at one-second intervals. (Check mode)



- (2) When one remote controller controls several units in the group control, the LCD shows the unit address and check code of the first malfunctioning unit.
- (3) To cancel the check mode, press the power ON/OFF button.



NOTE: The latest check code is memorized, even if the check mode is cancelled by the way mentioned above. It takes 60 seconds maximum to display the memorized check code.

2-2 How to use the self diagnostic function for service

A. For normal control with one unit and one remote controller

- (1) Pressing the CHECK button on the remote controller twice starts the self diagnostic function.
- (2) During the self diagnostic function, "CHECK" appears at two positions on the remote controller display. Then, at least 10 seconds later, the unit address and the check code is displayed at one-second intervals.
- (3) Check and repair the unit according to the check code. (Refer to the next page.)

2-3 For group control using one remote controller

- (1) Press the SET TEMP. button on the remote controller to advance or go back to the unit address. Each time SET TEMP. button is pressed, the unit address advances by one. Each time SET TEMP. button is pressed, the unit address goes back by one.
The check code and the unit address, appear will be displayed.
- (2) The check code "U8" means no malfunction has occurred since installation.
The check code "EO" means the following conditions:
 - The unit address displayed on the remote controller does not apply to any unit.
 - power is not supplied to the unit.
 - Signal transmitting / receiving circuit is abnormal.
- (3) Check and repair the unit according to the check code. (Refer to the next page.)

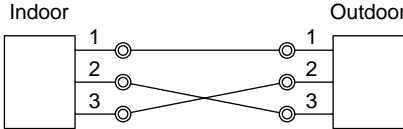
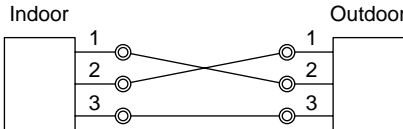
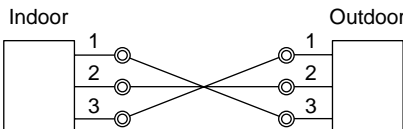
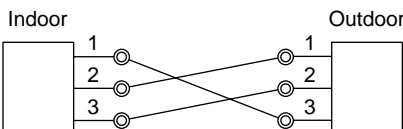
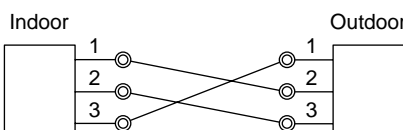
Check code	Diagnosis of malfunction	Cause	Check points
E0	Signal transmitting/receiving error Indoor controller does not respond to remote controller signal.	During individual unit control 1) Bad contact of transmission wire 2) Signal transmitting/receiving circuit is abnormal.	1) Check the transmission wire. 2) Check with another remote controller. If "E0" is still indicated, replace the indoor controller board. If other check code appears, replace the former remote controller.
P1	Abnormality of room temperature thermistor (TH1 or RT1)	1) Bad contact of thermistor 2) Damaged thermistor	1) Check the thermistor. 2) Measure the resistance of the thermistor. If normal, it should be as follows. 32°F....15kΩ 86°F ..4.3kΩ 50°F....9.6kΩ 104°F ..3.0kΩ 68°F....6.3kΩ If is normal, replace the indoor controller board.
P2	Abnormality of pipe temperature thermistor (TH2 or RT2)		
P3	Signal transmission error (Remote controller does not respond to indoor controller signal.)	1) Bad contact of transmission wire 2) Signal transmitting/receiving circuit is abnormal. 3) Wrong operation of remote controller due to infrared signal from other appliances	1) Check the transmission wire. 2) Check with another remote controller. If "P3" is still indicated, replace the indoor board. If other check code appears, replace the original remote controller. 3) Short-circuit between ① and ② of CN40 and attach CN40 to the following units. ● Second unit in twin control ● Second and third units in triple control ● Sub units in group control
P4	Abnormality of drain sensor	1) Bad contact of transmission wire 2) Damaged thermistor	1) Check the connector. 2) Measure the resistance of the thermistor ④ - ⑤. As for the normal resistance, refer to the case P1. If normal, replace the indoor controller board.
P5	Malfunction of drain pump	1) Malfunction of drain pump 2) Damaged drain sensor	1) Check the drain pump. 2) ● Check the drain sensor. ● Check the drain sensor heater. If normal, its resistance should be 82Ω. If normal, replace the indoor controller board.
P6	Coil frost protection has worked.	1) Short cycle of air cycle 2) Dirty air filter 3) Damaged fan 4) Abnormal refrigerant	1) Clear the obstructions from the air cycle. 2) Clean the air filter 3) Check the fan. 4) Check the refrigerant temperature.
P7	System error	1) Wrong address-setting 2) Signal transmitting/receiving circuit of remote controller is abnormal. 3) Wrong SW6-setting	1) Check the address-setting. 2) Check with another remote controller. If check code other than "P7" appears, replace the original remote controller. 3) Check SW6 setting.
	Signal transmission error In twin/triple control, the first unit has not received signal from the second unit or the third unit for 5 minutes.	1) Bad contact of transmission wire 2) Wrong operation due to infrared signal from other appliances	1) Check the transmission wire. 2) Short-circuit between ① and ② of CN40 and attach CN40 to the following unit. ● Second unit in twin control ● Second and third units in triple control ● Sub units in group control
P8	Abnormality in outdoor unit	1) Wrong wiring of indoor/outdoor connecting wire 2) Reversed phase 3) Protection device has worked 4) Damaged outdoor coil thermistor	1) Check the indoor/outdoor connecting wire. 2) Change the connection of electric wiring. 3) Check the detail of the protection device. 4) Measure the resistance of the pipe temperature thermistor. If normal, replace the outdoor controller board.

3. WRONG WIRING ON SITE

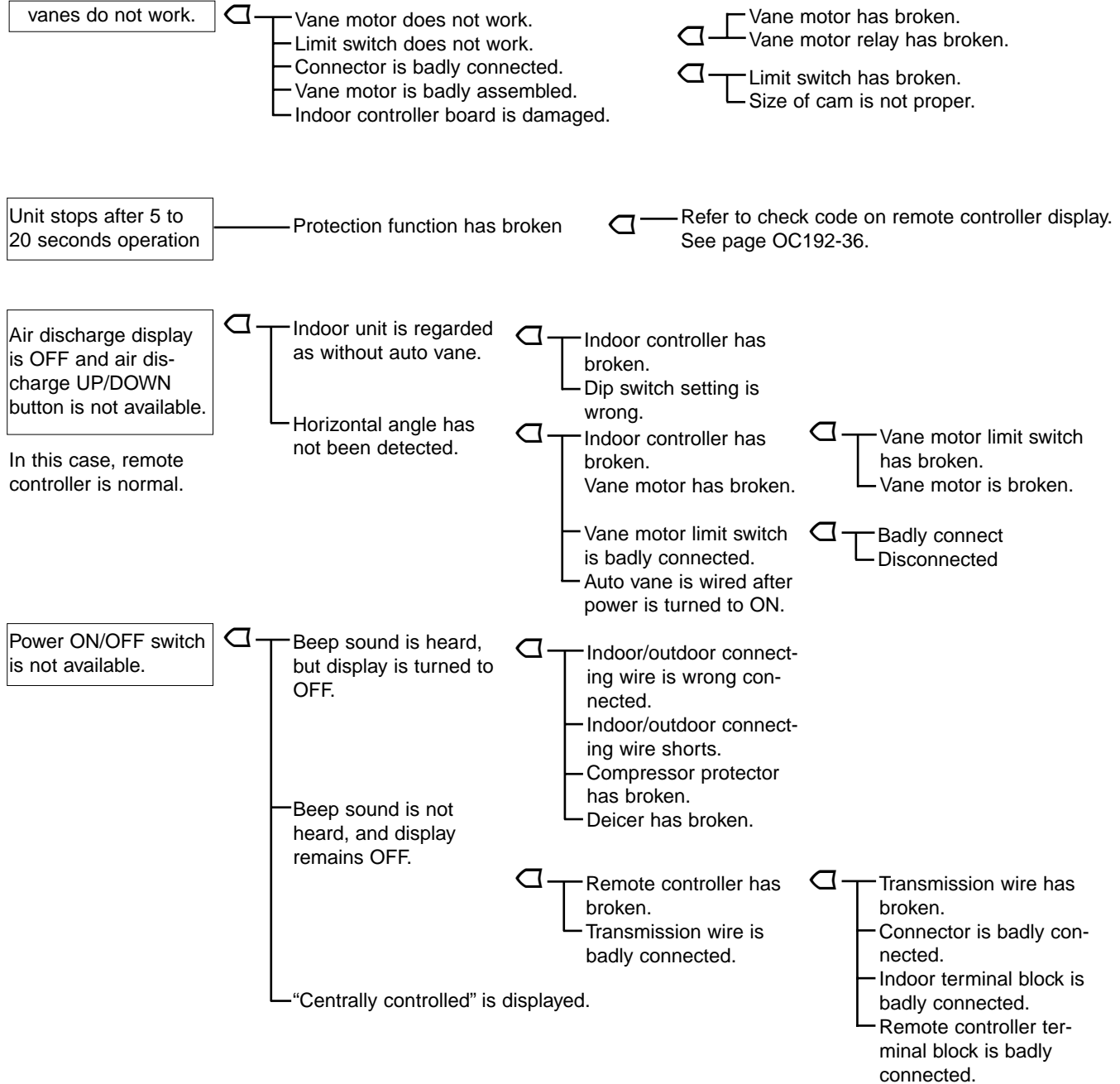
3-1 Between remote controller and indoor unit

If the wire is disconnected between the remote controller and the indoor unit, nothing is displayed on the remote controller when the POWER button is pressed. The beep sound will also not be heard.

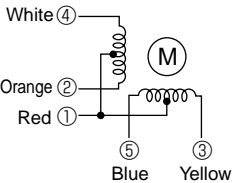
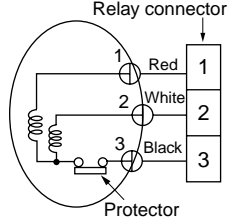
3-2 Phenomenon due to wrong wiring between indoor and outdoor units

Wrong wiring	Thermostat	Phenomenon
	OFF	Operation stops.
	ON	4-Way valve is turned to ON. 9 minutes later, the check code "P8" appears on the remote controller display.
	OFF	The outdoor unit stops.
	ON	Operation stops. 9 minutes later, the check code "P8" appears on the remote controller display.
	OFF	The outdoor unit stops.
	ON	Operation stops. 9 minutes later, the check code "P8" appears on the remote controller display.
	OFF	The outdoor unit stops.
	ON	Operation stops. 9 minutes later, the check code "P8" appears on the remote controller display.
	OFF	The outdoor unit stops.
	ON	Operation stops. 9 minutes later, the check code "P8" appears on the remote controller display.
Disconnection between 1 and 1 or 2 and 2.	OFF	Operation stops.
	ON	9 minutes later, the check code "P8" appears on the remote controller display.
Disconnection between 3 and 3.	OFF	Normal operation.
	ON	

4. OTHER TROUBLES AND CAUSES



5. How to check the parts

Parts name	Check points																						
Room temperature thermistor (TH1)	Disconnect the connector then measure the resistance using a tester. (Surrounding temperature 50°F~86°F)																						
Liquid pipe thermistor (TH2)	<table><tr><td>Normal</td><td>Abnormal</td></tr><tr><td>4.3kΩ~9.6kΩ</td><td>Open or short</td></tr></table>			Normal	Abnormal	4.3kΩ~9.6kΩ	Open or short	(Refer to the thermistor)															
Normal	Abnormal																						
4.3kΩ~9.6kΩ	Open or short																						
Vane motor	Measure the resistance between the terminals using a tester. (Surrounding temperature 68°F~86°F)																						
	<table><tr><th rowspan="2">Connector</th><th colspan="3">Normal</th><th rowspan="2">Abnormal</th></tr><tr><th>24EK1</th><th>30EK1</th><th>36,42EK1</th></tr><tr><td>Red — Yellow</td><td rowspan="4">186~214Ω</td><td rowspan="4">140~160Ω</td><td rowspan="4">140~160Ω</td><td rowspan="4">Open or short</td></tr><tr><td>Red — Blue</td></tr><tr><td>Red — Orange</td></tr><tr><td>Red — White</td></tr></table>			Connector	Normal			Abnormal	24EK1	30EK1	36,42EK1	Red — Yellow	186~214Ω	140~160Ω	140~160Ω	Open or short	Red — Blue	Red — Orange	Red — White				
Connector	Normal				Abnormal																		
	24EK1	30EK1	36,42EK1																				
Red — Yellow	186~214Ω	140~160Ω	140~160Ω	Open or short																			
Red — Blue																							
Red — Orange																							
Red — White																							
Fan motor	Measure the resistance between the terminals using a tester.																						
	<table><tr><th rowspan="3">Motor terminal or Relay connector</th><th colspan="3">Normal</th><th rowspan="3">Abnormal</th></tr><tr><th colspan="3">PC</th></tr><tr><th>24EK1</th><th>30EK1</th><th>36,42EK1</th></tr><tr><td>Red-Black</td><td>45.0Ω</td><td>45.0Ω</td><td>20.4Ω</td><td rowspan="2">Open or short</td></tr><tr><td>White-Black</td><td>44.8Ω</td><td>44.8Ω</td><td>20.7Ω</td></tr></table>			Motor terminal or Relay connector	Normal			Abnormal	PC			24EK1	30EK1	36,42EK1	Red-Black	45.0Ω	45.0Ω	20.4Ω	Open or short	White-Black	44.8Ω	44.8Ω	20.7Ω
Motor terminal or Relay connector	Normal				Abnormal																		
	PC																						
	24EK1	30EK1	36,42EK1																				
Red-Black	45.0Ω	45.0Ω	20.4Ω	Open or short																			
White-Black	44.8Ω	44.8Ω	20.7Ω																				

<Thermistor Characteristic graph>

Thermistor for lower temperature

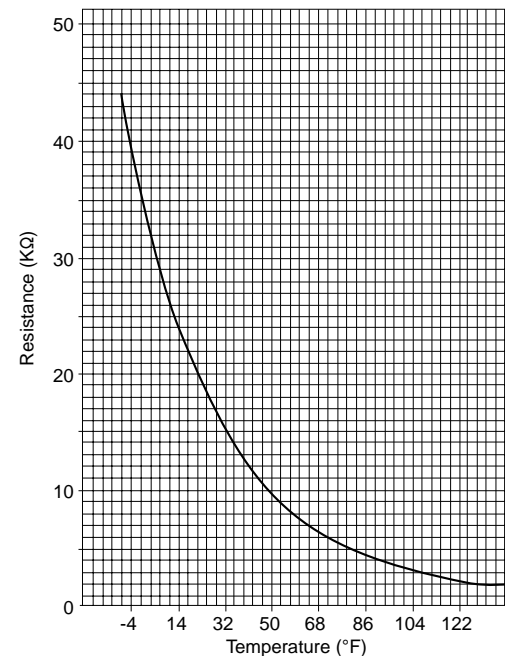
Room temperature thermistor(TH1)
Liquid pipe thermistor(TH2)

Thermistor $R_0=15k\Omega \pm 3\%$
Fixed number of $B=3480k\Omega \pm 2\%$

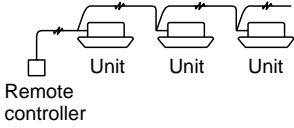
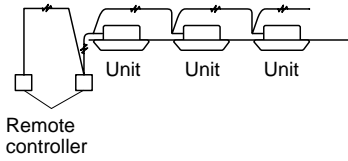
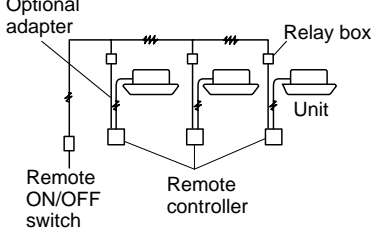
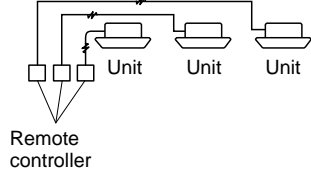
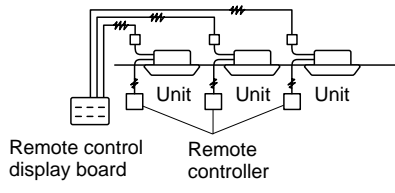
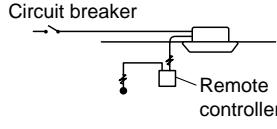
$$R_t = 15 \exp \left\{ 3480 \left(\frac{1}{273 + \{(t-32)/1.8\}} - \frac{1}{273} \right) \right\}$$

32°F	15kΩ
50°F	9.6kΩ
68°F	6.3kΩ
77°F	5.2kΩ
86°F	4.3kΩ
104°F	3.0kΩ

< Thermistor for lower temperature >



1. VARIETY OF SYSTEM CONTROL FUNCTIONS

<p>① Group control by a single remote controller (See page OC192-41.)</p>	 <p>Remote controller</p>	<p>A number of units, installed at different locations can be started and controlled with a single remote controller. The remote controller can be mounted in a different location using a non-polar two-wire cable, which can be extended up to 550 yards. A maximum of 50 units are controllable by a single remote controller. All units operate in the same mode.</p>
<p>② Control using two remote controllers (See page OC192-42.)</p>	 <p>Remote controller</p>	<p>Two remote controllers can be used to control either one unit or several units in group control. This enables to control units with ease either from a distance or close range. Units operate according to the latest command from either remote controller.</p>
<p>③ Both remote ON/OFF and individual controls (See page OC192-42.)</p>	 <p>Optional adapter Remote ON/OFF switch Remote controller Relay box</p>	<p>All units can be turned on or off simultaneously using the remote ON-OFF switch. Besides each unit can be controlled individually by each remote controller. During remote ON-OFF control, a message of "CENTRALLY CONTROLLED" is displayed on the LCD of the remote controller. This method is available for both one unit control and several units control.</p>
<p>④ Individual control by grouping remote controllers (See page OC192-43.)</p>	 <p>Remote controller</p>	<p>By grouping the controllers to one place, several units installed at different locations can be controlled individually, and operation conditions of all units are visible without a special control board. Control method is the same as that of the single unit with a single remote controller.</p>
<p>⑤ Multiple remote control display (See page OC192-44.)</p>	 <p>Remote control display board Remote controller</p>	<p>Several units can be controlled by remote control display board. Operation conditions of all the units are visible with the remote control display board. Individual control by each remote controller is also available.</p>
<p>⑥ AUTO RESTART FUNCTION (See page OC192-44.)</p>	 <p>Circuit breaker Remote controller</p>	<p>Units can be started or stopped by circuit breaker on or off. Remote controller is also available. By this function, when the power is restored after power failure, the unit restarts automatically.</p>

2. GROUP CONTROL BY A SINGLE REMOTE CONTROLLER

A maximum of 50 units can be started in order according to the dip switch settings

2-1 How to wire

- (1) Connect the remote controller to the double terminal block on the indoor controller board of the master unit, that is, No.0 unit. (See Figure 1.)
- (2) Connect the double terminal block of the master unit to the double terminal block of No.1 unit.
- (3) Connect the double terminal block of No.1 unit to the double terminal block of No.2 unit.
- (4) Continue the process until all the units are connected with two-wire cables. (See Figure 2.)
- (5) Remove the connector CN40 from the indoor controller board of each unit except the master unit. (See Figure 3.)
- (6) Set the unit-address of each unit with SW2 on the indoor controller board following the instructions below.

Figure 1

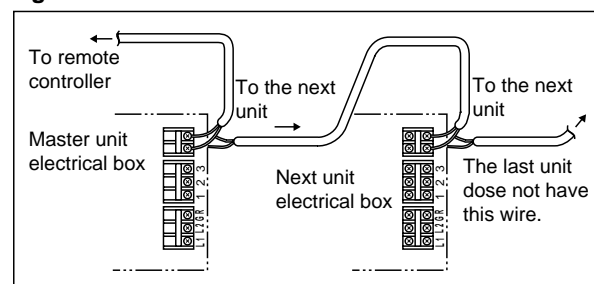
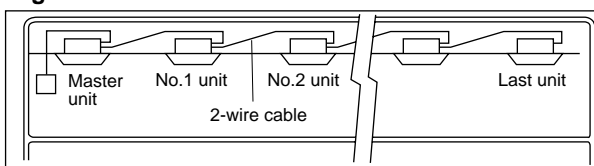


Figure 2



2-2 How to set unit-address

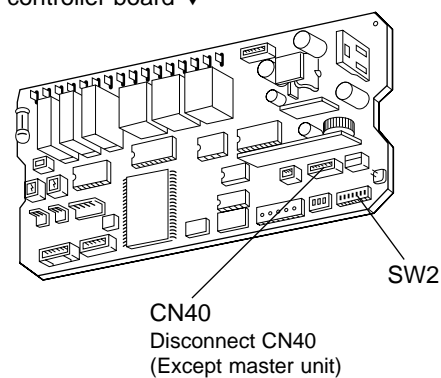
The unit-address also serves as a successive-start timer which starts each unit at intervals of 1 second. If two or more units have the same unit-address in a group control, operation stops due to system error. Be sure to set SW2 correctly following the instructions below.

- (1) Each lever of SW2 shows the number as follows.

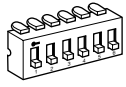
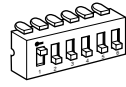
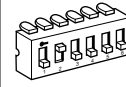
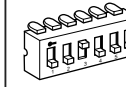
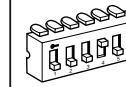
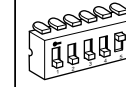
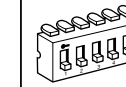
SW2-1 : 1	SW2-4 : 8
SW2-2 : 2	SW2-5 : 16
SW2-3 : 4	SW2-6 : 32
- (2) Total number of levers turned to ON shows the address of the unit.
If you turn ON SW2-1 and SW2-2, the unit-address is set as No.3.
- (3) In this way, set from the master unit to the last unit.
Do not forget to set the master (No. 0) unit.

Figure 3

Indoor controller board ▼



Setting examples

	Master (No. 0) unit	No. 1 unit	No. 2 unit	No. 4 unit	No. 8 unit	No. 16 unit	No. 32 unit
SW2	ALL OFF 	1 ON 	2 ON 	3 ON 	4 ON 	5 ON 	6 ON 
Unit address & start delay in seconds.	0	1	2	4	8	16	32

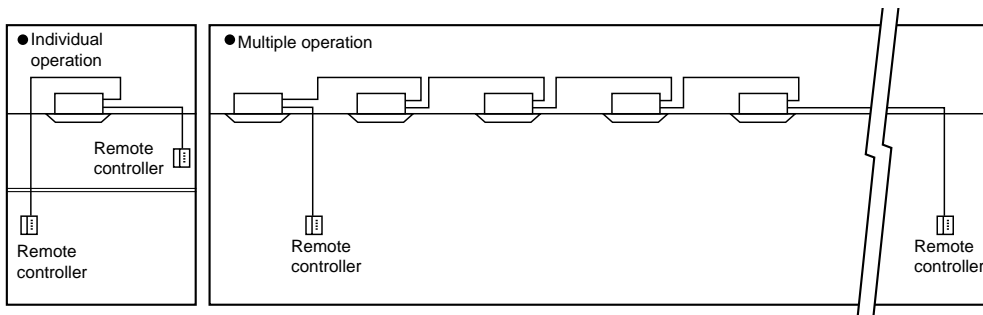
2-3 Unit control

The remote controller can control all units ON/OFF, temperature, air flow, and swing louver. However, the thermostat in each unit turns to ON or OFF individually to adjust the room temperature.

3. CONTROL USING TWO REMOTE CONTROLLERS

Two remote controllers are available for control of either one unit or a group of units. Units operate according to the latest command from either of the two remote controllers.

However, before operation, be sure to set one remote controller for "main controller" and the other for "sub controller", using dip switch SW17-7 of the remote controller.

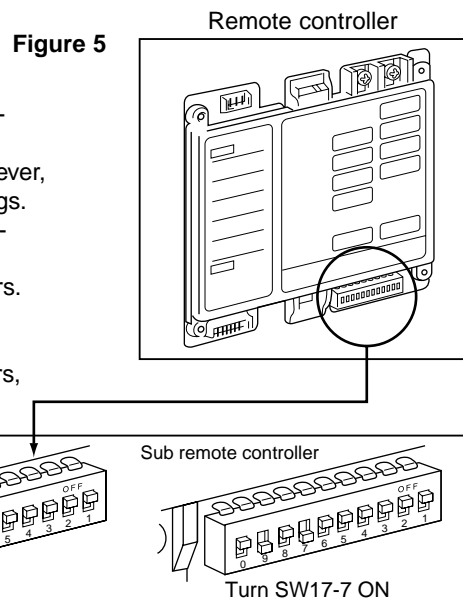


3-1 How to set SW17-7

- (1) For the main remote controller, turn SW17-7 OFF. (See Figure 5.)
- (2) For the sub remote controller, turn SW17-7 ON.

3-2 Remote controller LCD indication

- (1) The same indication always appear on both the main and sub remote controllers, excepting the timer operations.
- (2) Timer operation can be set with either of the two remote controllers. However, LCD indication appears only on the remote controller used for timer settings.
- (3) If both remote controllers are set for timer operation with different time-settngs, the timer operation of shorter remaining-time is effective.
- (4) Self-diagnostic function is available with either of the two remote controllers. If one of the remote controllers is used for the self-diagnostic function, the other remote controllers displays the check mode. If the self-diagnostic function is reset by either of the two remote controllers, both remote controllers are reset.



4. REMOTE ON-OFF AND INDIVIDUAL REMOTE CONTROLS

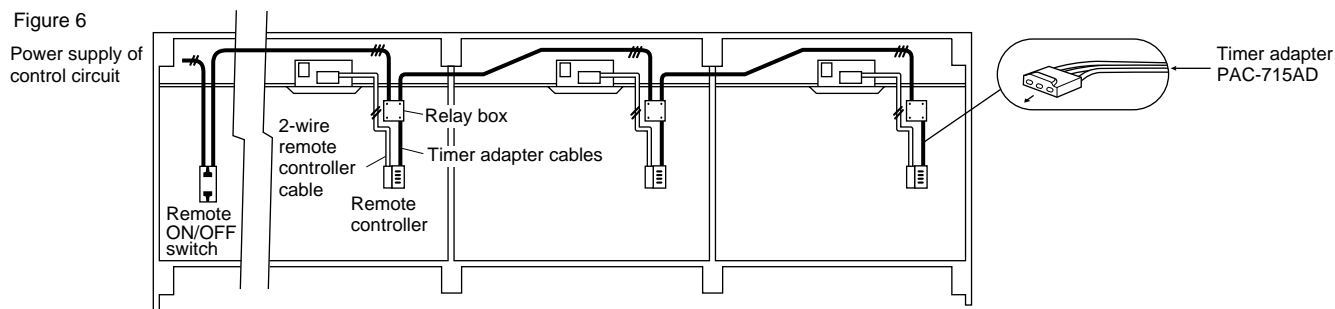
This method is available to control one unit or any number of units.

The following operations are available by connecting a relay, a timer adapter(PAC-715AD), and remote ON/OFF switch to the system. Timer adapter, (PAC-715AD), is an optional part. Other parts are on the market.

- (A) To start all units in order by remote ON-OFF switch
- (B) To stop all units simultaneously by remote ON-OFF switch
- (C) To switch from the remote ON-OFF control to the individual remote control

4-1 System

Figure 6 shows the case of three units as an example. The same is the case with any number of units.



NOTE1 : Install the relay box where you can be serviced easily.

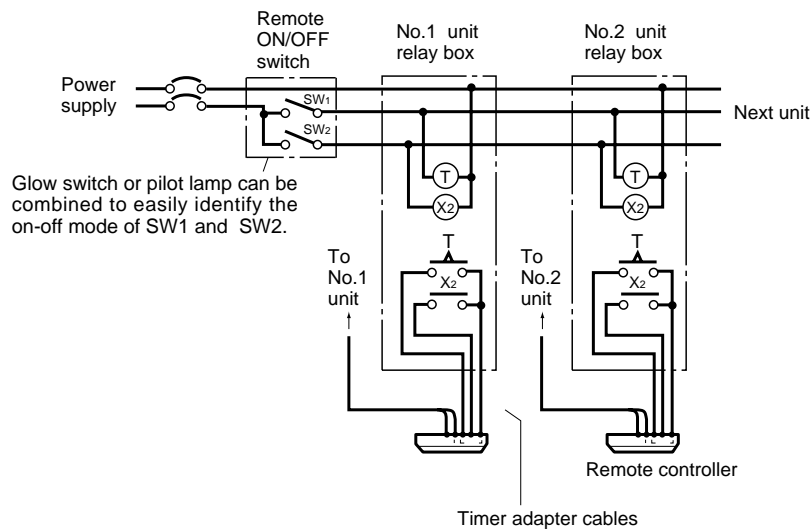
NOTE2 : For control circuit wiring, use a wire of No. 14 AWG or a control cable according to the power supply of control circuit.

NOTE3 : When the power supply of the control circuit is 115/230V AC,

- Do not connect the control circuit wire to the remote controller cable directly.
- Do not place the control circuit wire and the remote controller cable into the same conduit tube.

4-2 Basic wiring

Caution : Before starting all units simultaneously by the remote ON-OFF switch, be sure to connect a sequence-start timer into the remote ON-OFF circuit. Otherwise, rush of starting current exert a bad influence upon the power supply.



4-3 Switch function of remote ON-OFF switch

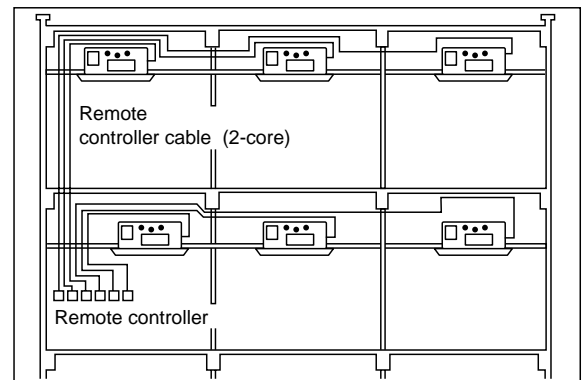
		SW2 (Switches between remote ON-OFF and individual control)	
		ON (Remote ON-OFF control)	OFF (Individual control)
SW1 (Switches between remote ON and OFF.)	ON (Start)	All units start together. ※1 Individual control is not available.	Each unit can be controlled by each remote controller. Remote ON-OFF switch is not available.
	OFF (Stop)	All units stop together. ※2 Individual control is not available.	

※1 After all units start together, if SW2 is turned OFF, each unit can be individually stopped by each remote controller.

※2 After all units stop together, if SW2 is turned OFF, each unit can be individually started by each remote controller.

5. INDIVIDUAL CONTROL BY GROUPING THE REMOTE CONTROLLERS

- Grouping the remote controllers allows individual control and centralized monitoring of units installed in different places without a special control board.
- Remote control cables can be extended up to 550 yards. When the cable length exceeds 39 ft, use the double-insulated two-core cable such as Belden 9407, and the cable thickness must be No. 22 AWG or above.
- When gathering the power ON/OFF switches of air conditioners near the remote controllers, you should also install the power ON/OFF switch near each unit to prevent electric trouble in servicing.



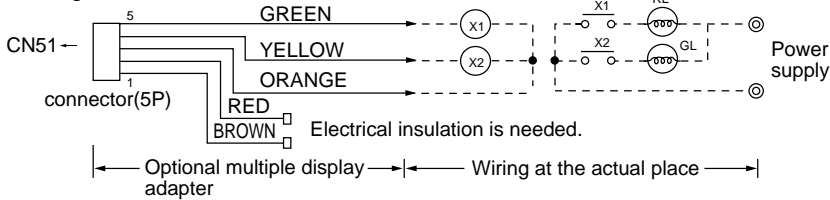
6. MULTIPLE REMOTE CONTROL DISPLAY

You can control several units by a multiple remote control display, if you wire an optional multiple display adapter (PAC-725AD) with relays and lamps on the market.

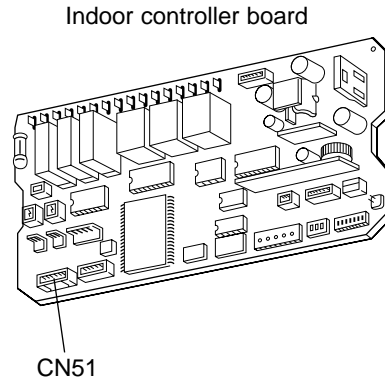
6-1 How to wire

- (1) Connect the multiple display adapter to the connector CN51 on the indoor controller board.
- (2) Wire three of the five wires from the multiple display adapter as shown in the below figure.

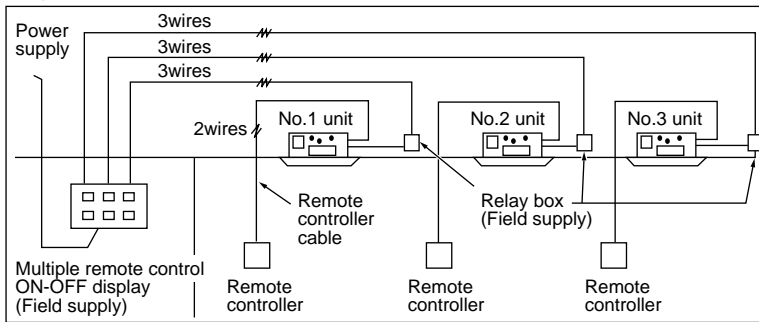
<Wiring>



The maximum distance between indoor board and relay is 33 feet.



<System>



(Operation check)

[Notes on Signs]

X1:Relay (for check lamp)

X2:Relay (for operation lamp)

RL:Check Lamp

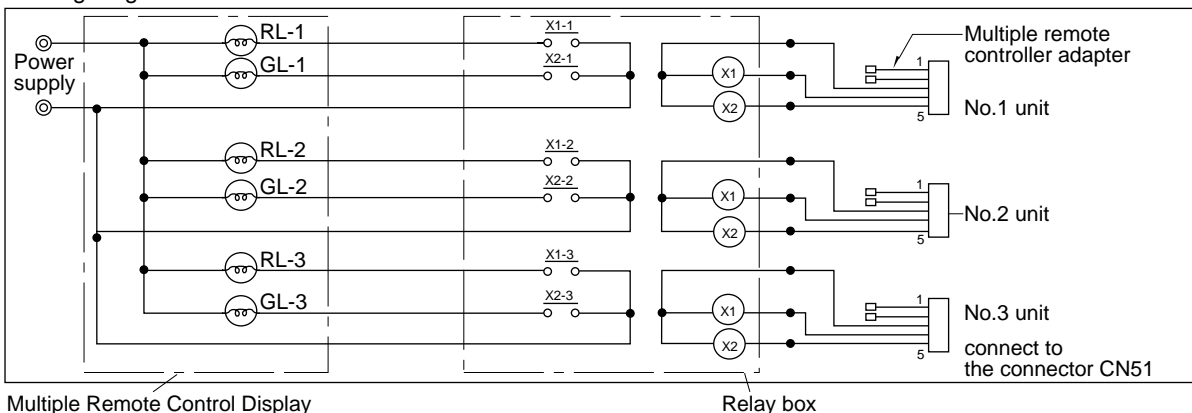
GL:Operation Lamp

[Field supplied parts]

Relays:DC 12V with rated coil power consumption below 0.9W.

Lamps:Matching to power supply voltage.

<Wiring diagram>



7. AUTO RESTART FUNCTION

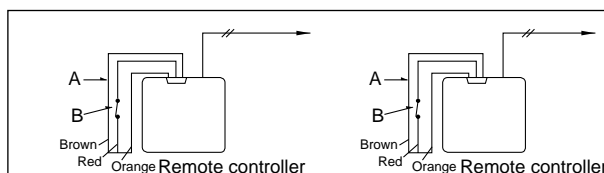
Unit can be started or stopped by power supply ON or OFF.

Therefore, after power failure, when the power is restored, the unit restarts automatically.

To enable this function, turn ON the dip switch SW1-10 on the indoor controller board.

For remote control, connect the optional timer adapter (PAC-715AD).

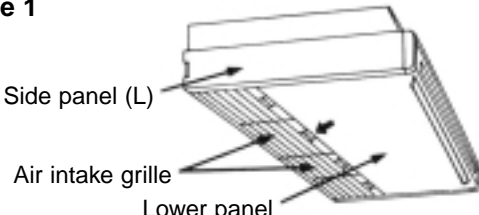
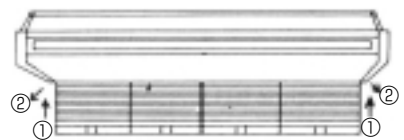
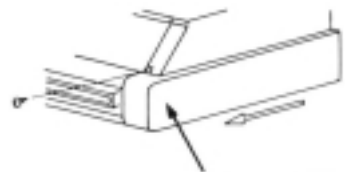


<Wiring>

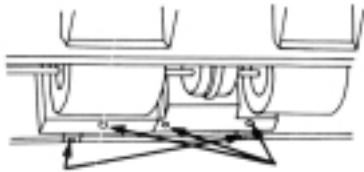
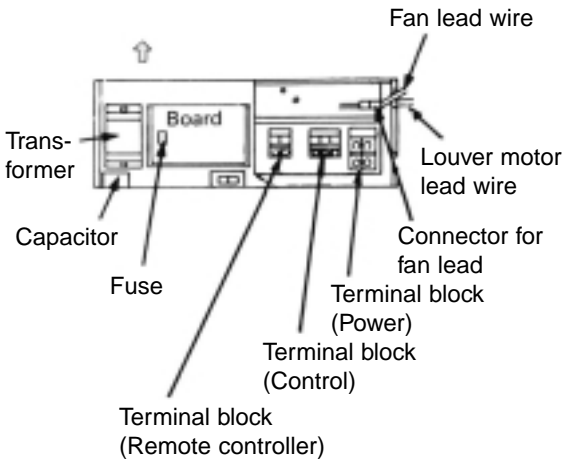


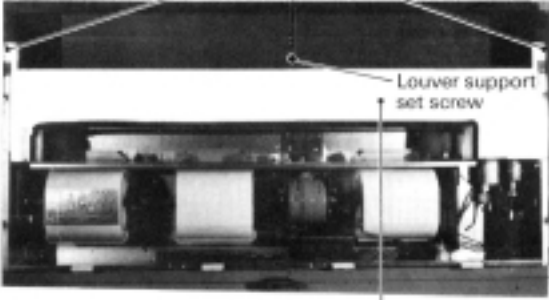
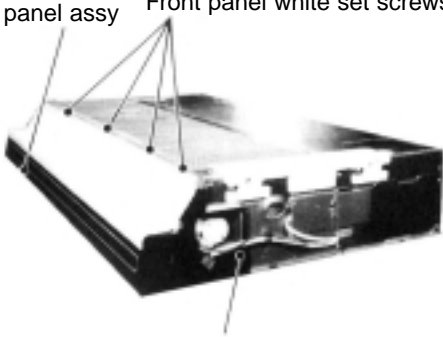
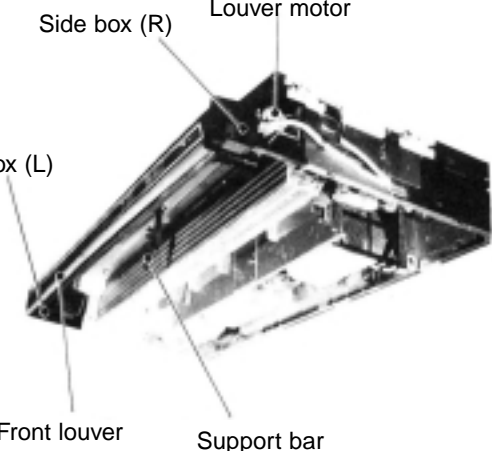
A : an optional timer adapter

B : a single-throw switch

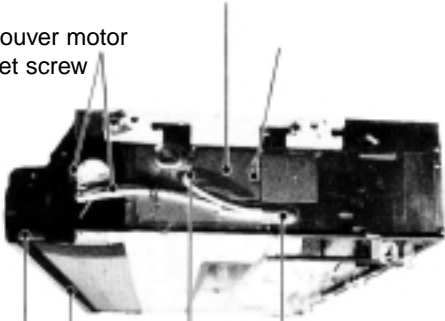
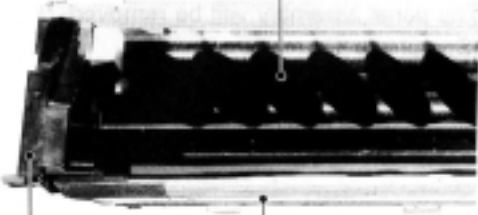
Indoor unit (PC24EK1)

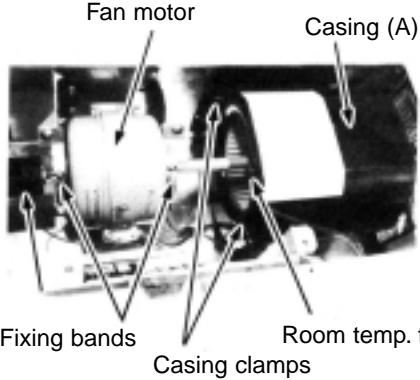
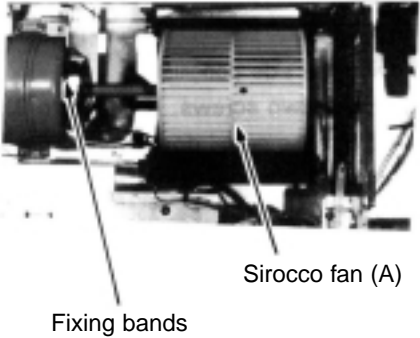
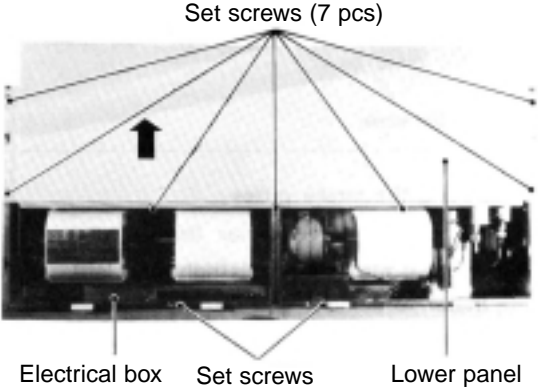
OPERATING PROCEDURE	PHOTOS&ILLUSTRATION
1. Removing the air intake grille (1) Unhook the clasps at the edge of the grille and open the grill. (2) Lift up the grill in direction of arrow ① in Fig.2. (3) Pull the grill toward you to remove. (In direction of arrow ②)	Figure 1  Figure 2 
2. Removing the side panel (1) Remove a white screw of the side panel (RIGHT). (2) Pull out the panel toward you to remove. (3) Remove a white screw of the side panel (LEFT). (4) Pull out the panel toward you to remove.	Figure 3  Side panel (R)
3. Removing the lower panel (1) Remove the lower panel set screws, 2 pcs on each side and 3 pcs at the rear. (total 7 pcs) * PC24EK has 4 pcs at the rear and 2 pcs on each side. (total 8 pcs)	Figure 4  Lower panel Support bar
4. Removing the electrical box (1) Remove the air intake grille. (Refer to 1.) (2) Remove the support bar set screw and remove the bar. (See fig. 4) (3) Loose the lead clamps (2 pcs) for the sirocco fan and the louver motor. (See photo 1)	Photo 1  Electrical box Clamps for fan lead

OPERATING PROCEDURE	PHOTOS&ILLUSTRATION
<p>(4) Remove the electrical box set screws. (2 pcs) Pull down the electrical box and hang it from the rear panel using the S hooks located on the both sides of the box.</p> <p>(5) The electrical box has two covers. (R and L) Remove the 2 screws on the cover (R), and remove the screw on the cover (L). Then remove the box covers.</p> <p>(6) Now you can check the inside of the electrical box. (See fig. 6)</p>	<p>Figure 5</p>  <p>Electrical box Box cover set screws (3 pcs) Set screws (2 pcs)</p> <p>Figure 6</p>  <p>Fan lead wire Louver motor lead wire Connector for fan lead Terminal block (Power) Terminal block (Control) Terminal block (Remote controller) Transformer Capacitor Fuse Board</p>

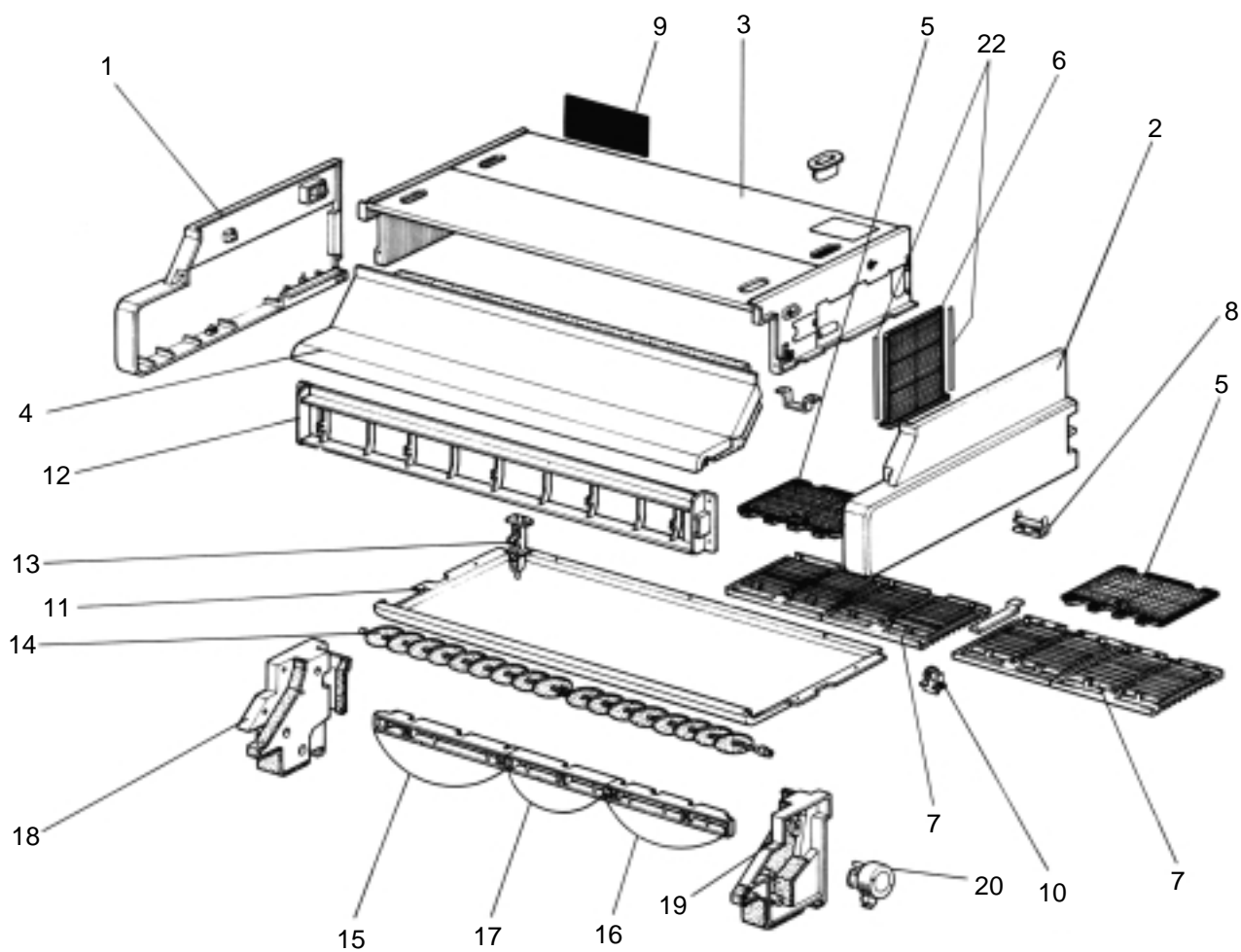
OPERATING PROCEDURE	PHOTOS
<p>5. Removing the drain pan</p> <p>After removing the lower panel:</p> <ol style="list-style-type: none"> (1) Remove the drain pan support set screws (2 pcs) (2) Remove the louver support set screw. (See photo 2) (3) Remove the drain pan. 	<p>Photo 2</p>  <p>Set screws</p> <p>Louver support set screw</p> <p>Drain pan</p>
<p>6. Removing the front panel assembly</p> <p>After removing the drain pan:</p> <ol style="list-style-type: none"> (1) Pull the lower louver toward you and unhook the clasps. (2 points at the center) (2) Remove the front panel white set screws. (4 pcs) (3) Remove the side box set screws on the both sides. (4 screws on the side and front, 1 screw at the bottom, on each side.) (4) The panel assembly will be removed. (See photo 3) 	<p>Photo 3</p>  <p>Front panel assy</p> <p>Front panel white set screws</p> <p>Side box set screw</p>
<p>7. Removing the louver motor</p> <p>Remove only the right side panel to remove this motors.</p> <ol style="list-style-type: none"> (1) Remove setting screws of motor. (2 pcs) (See photo 5) <p>8. Removing of the swing louver</p> <ol style="list-style-type: none"> (1) Remove the swing louver from the joint on the right side. (2) Slide the louver out to the left side. 	<p>Photo 4</p>  <p>Side box (R)</p> <p>Louver motor</p> <p>Side box (L)</p> <p>Front louver</p> <p>Support bar</p>



OPERATING PROCEDURE	PHOTOS
<p data-bbox="136 314 463 340">9. Removing the front louver</p> <p data-bbox="169 344 824 370">(1) Pull and unhook the louver toward you. (Clasps are 5 pcs)</p>	<p data-bbox="887 344 987 370">Photo 5</p> <div data-bbox="937 395 1441 868"><p data-bbox="1105 395 1340 421">Thrmistor check plate</p><p data-bbox="979 453 1127 506">Louver motor set screw</p><p data-bbox="1038 768 1164 821">Front panel lower</p><p data-bbox="1236 783 1384 808">Side plate (S)</p><p data-bbox="1122 810 1228 836">Thrmistor</p><p data-bbox="937 810 1034 863">Side box Right</p></div> <p data-bbox="887 1008 987 1034">Photo 6</p> <div data-bbox="908 1081 1412 1491"><p data-bbox="1135 1081 1278 1106">Swing louver</p><p data-bbox="908 1427 1009 1481">Side box left</p><p data-bbox="1164 1442 1290 1495">Front panel lower</p></div>

OPERATING PROCEDURE	PHOTOS
<p>10. Removing the fan motor After remove the electrical box covers:</p> <ol style="list-style-type: none"> (1) Disconnect the lead connector for fan. (2) Pull out the room temp. thermistor from the casing (A). (See photo 7) (3) Loose the shaft joint set screws (2 pcs) with a hexagonal wrench. (size 3mm). (4) Unhook the casing (A) by pushing. (2 points for each side) (5) Open about half of the casing (A) and take it out. (6) Loose the fixing band set screws. (1 pcs on the both sides of the fan motor.) (7) Remove the fixing bands. (8) Take out the fan motor. 	<p>Photo 7</p>  <p>Fan motor Casing (A)</p> <p>Fixing bands Room temp. thermistor Casing clamps</p> <p>Photo 8</p>  <p>Fixing bands Sirocco fan (A)</p>
<p>11. Removing the room temperature thermistor After removed the electrical box covers:</p> <ol style="list-style-type: none"> (1) Pull out the room temperature thermistor from the casing (A). (2) Disconnect the connector (CN-20) from the controller board in the electrical box. (3) Take out the thermistor. <p>12. Removing the indoor coil thermistor After removed the electrical box covers:</p> <ol style="list-style-type: none"> (1) Remove the right side panel. (2) Remove the set screw of the thermistor check plate and the set screws of the side plate. (3 pcs) (See photo 5) (3) Remove the indoor coil thermistor from the heat exchanger. (4) Disconnect the connector (CN-21) from the controller board in the electrical box. (5) Take out the thermistor. 	<p>Photo 9</p>  <p>Set screws (7 pcs)</p> <p>Electrical box Set screws Lower panel</p>

PC24EK PC30EK STRUCTURAL PARTS
PC24EK1 PC30EK1



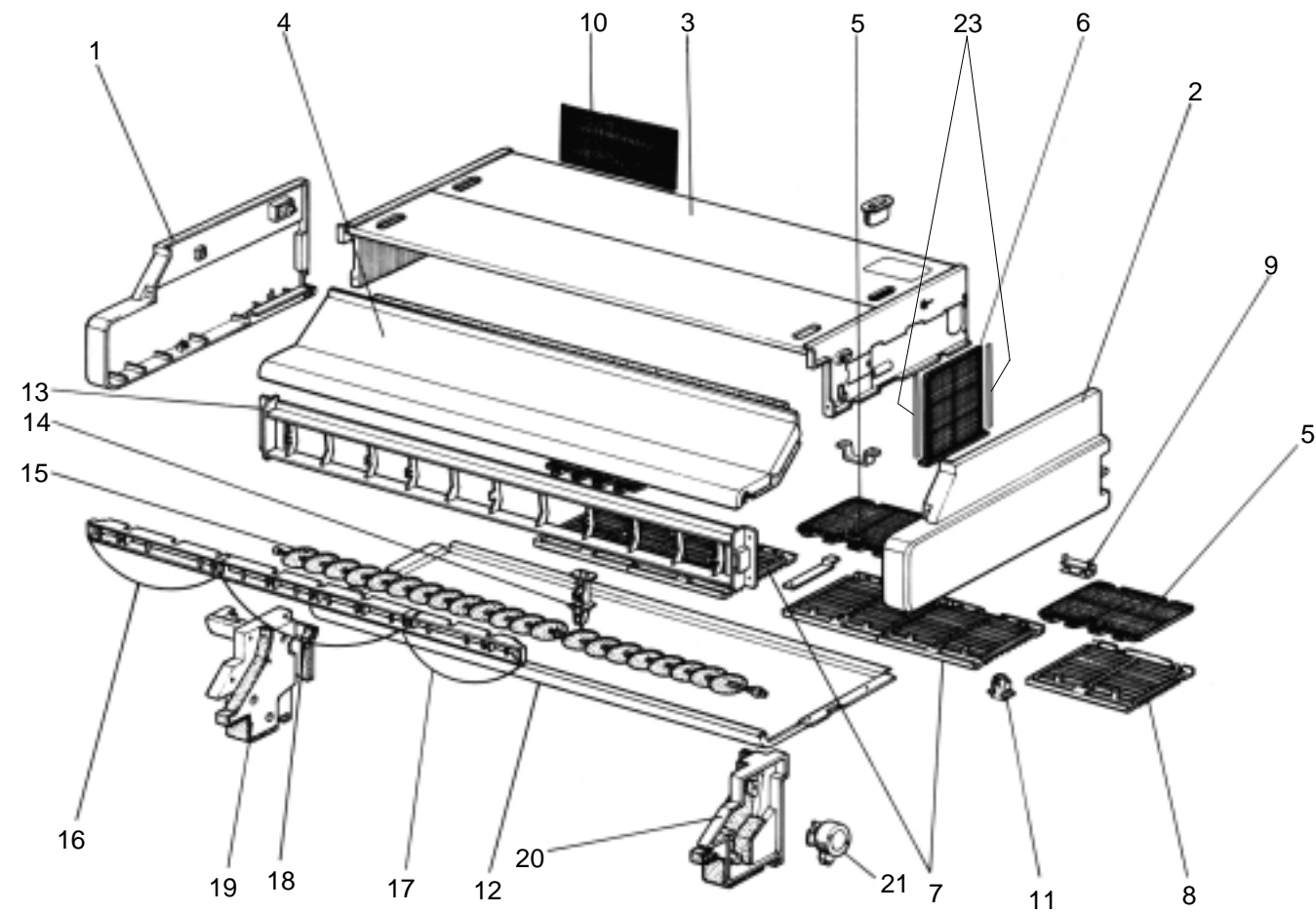


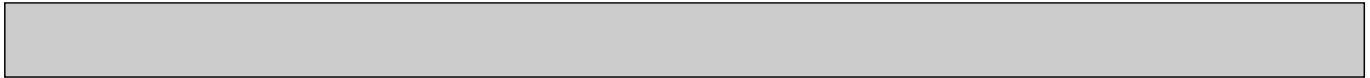
Part number that is circled is not shown in the figure.

No.	Parts No.	Parts Name	Specifications Drawing No.	Q'ty/set				Remarks	Circuit Diagram Symbol	Recom- mended Q'ty	Price	
				PC							Unit	Amount
				24		30						
				EK	EK ₁	EK	EK ₁					
1	R01 055 662	SIDE PANEL (LEFT)		1	1	1	1					
2	R01 055 661	SIDE PANEL (RIGHT)		1	1	1	1					
3	T7W 052 676	REAR & TOP PLATE		1	1	1	1					
4	R01 051 651	FRONT PANEL		1	1	1	1					
5	R01 A25 500	AIR FILTER		4	4	4	4					
6	R01 055 501	AIR FILTER (SUB)		1	1	1	1					
7	R01 029 691	INTAKE GRILL		2	2	2	2					
8	R01 029 061	HINGE		4	4	4	4					
9	T7W 051 501	AIR FILTER		1	1	1	1					
10	R01 029 054	CATCH		4	4	4	4					
11	R01 146 669	LOWER PANEL		1	1	1	1					
12	T7W 052 001	FRONT GRILL		1	1	1	1					
13	R01 045 048	LOUVER SUPPORT		1	1	1	1					
14	R01 045 003	SWING LOUVER		1	1	1	1					
15	R01 029 086	FRONT LOUVER (LEFT)		1	1	1	1					
16	R01 029 085	FRONT LOUVER (RIGHT)		1	1	1	1					
17	R01 045 087	FRONT LOUVER (CENTER)		1	1	1	1					
18	T7W 056 068	SIDE BOX (LEFT)		1	1	1	1					
19	T7W 056 067	SIDE BOX (RIGHT)		1	1	1	1					
20	T7W 146 222	LOUVER MOTOR		1	1	1	1		ML			
21	R01 045 808	LEG		2	2	2	2					
22	R01 82E 656	FILTER GUIDE		1	1	1	1					



PC36EK PC42EK STRUCTURAL PARTS
PC36EK1 PC42EK1

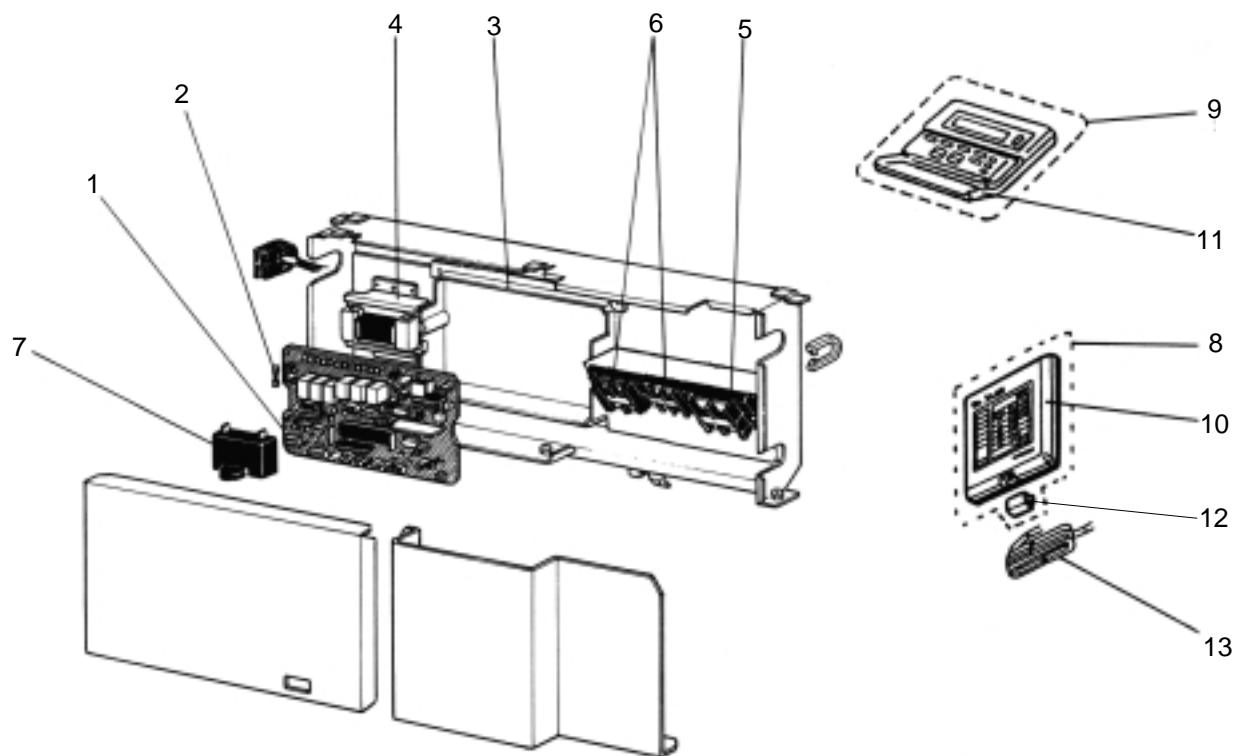




Part number that is circled is not shown in the figure.

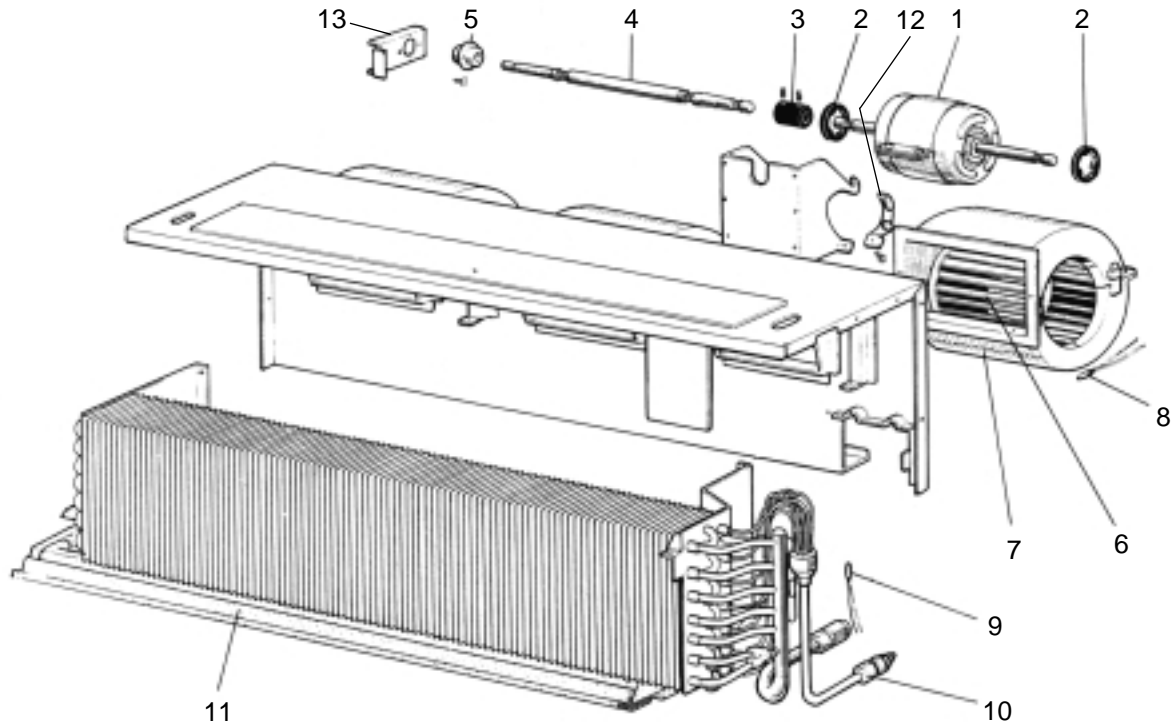
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				EK	EK ₁	EK	EK ₁					
1	R01 055 662	SIDE PANEL (LEFT)		1	1	1	1					
2	R01 055 661	SIDE PANEL (RIGHT)		1	1	1	1					
3	T7W 056 676	REAR & TOP PLATE		1	1	1	1					
4	R01 055 651	FRONT PANEL		1	1	1	1					
5	R01 A25 500	AIR FILTER		5	5	5	5					
6	R01 055 501	AIR FILTER (SUB)		1	1	1	1					
7	R01 029 691	INTAKE GRILL		2	2	2	2					
8	R01 029 692	INTAKE GRILL		1	1	1	1					
9	R01 029 061	HINGE		6	6	6	6					
10	T7W 051 501	AIR FILTER		1	1	1	1					
11	R01 029 054	CATCH		5	5	5	5					
12	R01 147 669	LOWER PANEL		1	1	1	1					
13	R01 147 001	FRONT GRILL		1	1	1	1					
14	R01 045 048	LOUVER SUPPORT		1	1	1	1					
15	R01 055 003	SWING LOUVER		1	1	1	1					
16	R01 029 086	FRONT LOUVER (LEFT)		1	1	1	1					
17	R01 029 085	FRONT LOUVER (RIGHT)		1	1	1	1					
18	R01 055 087	FRONT LOUVER (CENTER)		1	1	1	1					
19	T7W 056 068	SIDE BOX (LEFT)		1	1	1	1					
20	T7W 056 067	SIDE BOX (RIGHT)		1	1	1	1					
21	T7W 146 222	LOUVER MOTOR		1	1	1	1		ML			
22	R01 045 808	LEG		2	2	2	2					
23	R01 82E 656	FILTER GUIDE		1	1	1	1					

PC24EK PC30EK PC36EK PC42EK ELECTRICAL PARTS
PC24EK₁ PC30EK₁ PC36EK₁ PC42EK₁



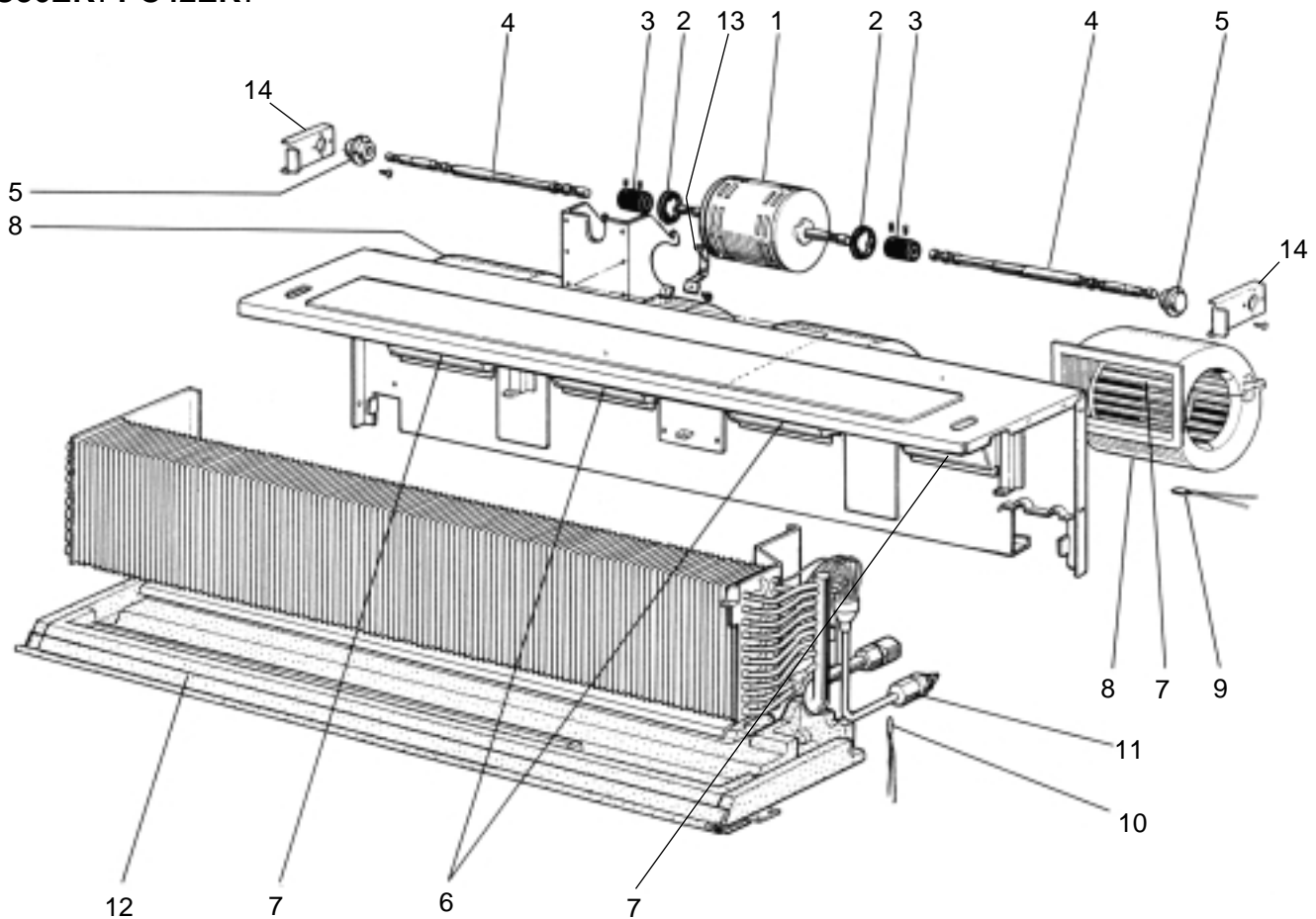
No.	Parts No.	Parts Name	Specifications Drawing No.	Q'ty/set					Remarks	Circuit Diagram Symbol	Recom- mended Q'ty	Price	
				PC								Unit	Amount
				24 EKEK ₁	30 EKEK ₁	36 EKEK ₁	42 EKEK ₁						
1	R01 K01 310	INDOOR CONTROLLER BOARD		1	1	1	1			I.B			
	T7W E06 310	INDOOR CONTROLLER BOARD		1	1	1	1			I.B			
2	T7W 410 239	FUSE	250V 6A	1	1	1	1	1	1	F			
3	T7W 829 070	CONTROLLER CASE		1	1	1	1	1	1				
4	T7W 046 260	TRANSFORMER	RED:15.5VAC, 0.3A BRN:11.0VAC, 0.6A	1	1	1	1	1	1	T			
5	T7W 410 716	TERMINAL BLOCK	2P (L1,L2)	1	1	1	1	1	1	TB1			
6	R01 556 246	TERMINAL BLOCK	2P (1,2)	2	2	2	2			TB2,3			
	T7W E02 716	TERMINAL BLOCK	2P (1,2)		2	2	2	2		TB2,3			
7	T7W 046 255	FAN MOTOR CAPACITOR	12 _μ F 220V	1	1	1	1	1	1	C			
8	T7W 450 200	REMOTE CONTROLLER BOARD		1	1	1	1			R.B			
9	T7W E01 713	REMOTE CONTROLLER BOARD			1	1	1	1	PAR-JC250KUS	R.B			
10	T7W 351 077	REMOTE CONTROLLER COVER		1	1	1	1						
11	T7W E03 049	REMOTE CONTROLLER COVER			1	1	1	1					
12	R01 L72 095	SCREW CAP		1	1	1	1						
13	T7W 556 305	REMOTE CONTROLLER CABLE	39ft	1	1	1	1						
	T7W A00 305	REMOTE CONTROLLER CABLE	33ft		1	1	1	1					

PC24EK PC30EK FAN SECTION PARTS
PC24EK₁ PC30EK₁



No.	Parts No.	Parts Name	Specifications Drawing No.	Q'ty/set				Remarks	Circuit Diagram Symbol	Recom- mended Q'ty	Price	
				PC							Unit	Amount
				24		30						
				EK	EK ₁	EK	EK ₁					
1	T7W 052 762	FAN MOTOR	RB09CC	1	1	1	1		MF			
2	R01 811 105	RUBBER MOUNT		2	2	2	2					
3	R01 700 116	JOINT (SHAFT)		1		1						
	R01 29J 116	JOINT (SHAFT)			1		1					
4	R01 G12 100	FAN SHAFT		1	1	1	1					
5	R01 621 103	SLEEVE BEARING		1	1	1	1					
6	R01 G18 114	SIROCCO FAN		3		3						
	T7W E00 114	SIROCCO FAN			3		3					
7	R01 055 110	CASING SET		3		3						
	T7W E02 110	CASING SET			3		3					
8	R01 J21 202	ROOM TEMPERATURE THERMISTOR		1		1			RT1			
	T7W E17 202	ROOM TEMPERATURE THERMISTOR			1		1		TH1			
9	R01 J07 202	PIPE TEMPERATURE THERMISTOR		1	1	1	1		RT2,TH2			
10	T7W 450 480	HEAT EXCHANGER		1	1							
	T7W 451 480	HEAT EXCHANGER				1	1					
11	T7W 048 529	DRAIN PAN		1	1	1	1					
12	R01 83E 126	PIECE (MOTOR)		1	1	1	1					
13	R01 G24 145	BEARING SUPPORT		1	1	1	1					

PC36EK PC42EK FAN SECTION PARTS
PC36EK₁ PC42EK₁



No.	Parts No.	Parts Name	Specifications Drawing No.	Q'ty/set				Remarks	Circuit Diagram Symbol	Recom- mended Q'ty	Price	
				PC							Unit	Amount
				36		42						
				EK	EK ₁	EK	EK ₁					
1	T7W 056 762	FAN MOTOR	KRB 152CA	1	1	1	1		MF			
2	R01 560 105	RUBBER MOUNT		2	2	2	2					
3	R01 700 116	JOINT (SHAFT)		2		2						
	R01 29J 116	JOINT (SHAFT)			2		2					
4	R01 G24 100	SHAFT		2	2	2	2					
5	R01 705 103	SLEEVE BEARING		2	2	2	2					
6	R01 G18 114	SIROCCO FAN		2		2						
	T7W E00 114	SIROCCO FAN			2		2					
7	R01 G24 114	SIROCCO FAN		2		2						
	T7W E01 114	SIROCCO FAN			2		2					
8	R01 055 110	CASING SET		4		4						
	T7W E02 110	CASING SET			4		4					
9	R01 J21 202	ROOM TEMPERATURE THERMISTOR		1		1			RT1			
	T7W E17 202	ROOM TEMPERATURE THERMISTOR			1		1		TH1			
10	R01 J07 202	PIPE TEMPERATURE THERMISTOR		1	1	1	1		RT2,TH2			
11	R01 J74 480	HEAT EXCHANGER		1		1						
	T7W E28 480	HEAT EXCHANGER			1		1					
12	T7W 050 529	DRAIN PAN		1	1	1	1					
13	R01 830 126	PIECE (MOTOR)		1	1	1	1					
14	R01 G24 145	BEARING SUPPORT		2	2	2	2					

1. TIMER

When using a program timer, a program timer adapter (PAC-825AD) is also needed.
(PAC-825AD is included with PAC-SC32PTA.)

Part No.	PAC-SC32PTA (with set back function)
Model Name	Program timer

1-1 Program timer specifications

Parts name	Program timer
Parts No.	PAC-SC32PTA
Exterior dimensions (inch)	5-4/32x4-23/32x23/32 (130x120x18mm)
Installation	Wall mount
Type of clock	Quartz
Clock accuracy	±50 second / month at 77°F
Display-Time	Liquid crystal display
-Week	Liquid crystal display
-Timer setting unit	Liquid crystal display
Program cycle	24 hours
Timer setting unit	30 minutes
No. of set points	48 / day
Power rating	5V DC ±5% (Supplied by Remote Controller)

1-2 Feature of program timer

(1) Daily timer function

Daily timer can be set in 30 minutes units for up to 24 hours.
Each unit can be set for unit ON, unit OFF, or setback operation.

(2) Setback operation (PAC-SC32PTA)

Set back operation is useful for reducing running costs

e.g. At a hotel with a 24-hour system

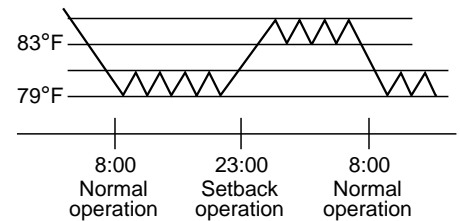
8:00~23:00 Cooling operation with set temperature at 79°F

23:00~8:00 Setback operation with 4 degrees of setback

As shown in the chart on the right, the set temperature rises 4 degrees automatically during the setback operation. When the setback operation ends, normal operation will begin.

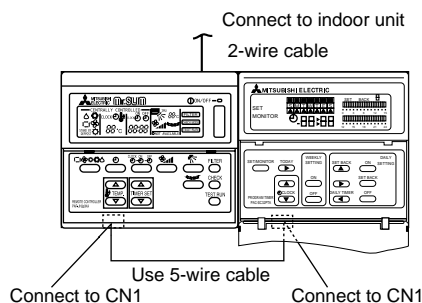
(3) Weekly timer function

Daily timer function can apply to each day of the week.



1-3 How to connect program timer

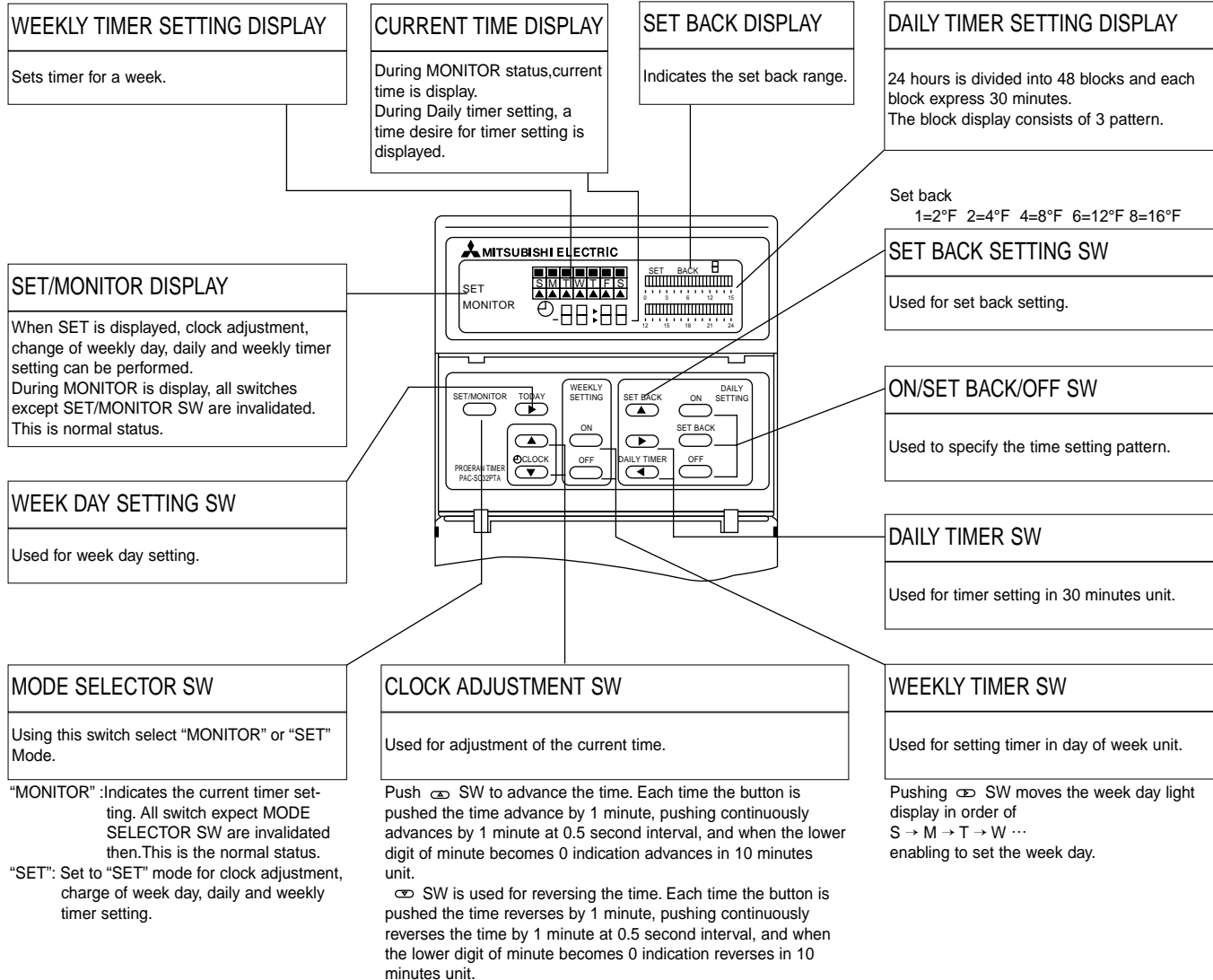
- Install the program timer next to the remote controller the same way as the remote controller is installed.
- Connect the program timer and the remote controller with a 5-wire cable as shown in the figure below



NOTE: While the program timer is connected to the remote controller, the 24hour ON/OFF timer on the remote controller will not operate.

1-4 Names and functions

<PAC-SC32PTA>



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Specifications are subject to change without notice.